

A PROTO-TYPE SYSTEM FOR THE CONTROL OF
LAND USE AND SETTLEMENTS
IN THE PLANNED DEVELOPMENT OF BANGLADESH

by

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To

IRSHAD, my father

and

RISHAD, my son

who represent, to me,

the symbol of the past

and the hopes for the future

of Bangladesh

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ABSTRACT

This work is a study of some problems of national development of Bangladesh. 'Development' here is perceived as the function of integrated action in such areas as nutrition, agriculture, social structure, technology, land use, human settlements and education. With this basic orientation, the work starts with a description of the physical features of Bangladesh, followed by a brief study of the social history of the Bangalee nation, the existing pattern of social relations, economic structure, demographic prospects and density, existing settlement structure and environment, and the prevailing social objectives. The first section thus defines the parameters of physical, social, cultural and economic resources and liabilities of the country, the guiding principle being that a country will be wise to plan its future in the light of its own resources and liabilities.

The second section of the thesis is a statement of the problems of Bangladesh. It is shown that the fundamental problem of the country is poverty, manifest in the 'good-gap' and 'trade-gap' situation at the national level, and in widespread under-nourishment and mal-nourishment at the human level. An attempt is made to show that the prevailing poverty is as much a result of the existing economic structure and social relations as of environmental deficiencies.

In the third section an effort is made to redefine 'development' in the context of Third World countries arguing that development must not be conceptualized simply as economic growth or expansion. Development must mean creating inner potentials for sustained development; borrowed capital and/or technology only enhances indebtedness. As a process, development should mean removal of those conditions which are identifiable as symptoms, causes or consequences of underdevelopment, and thus enabling people to use minimum resources to satisfy their expanding essential needs through a congruous set of relations between people and their social and physical environment. This implies that economic elements, social elements and ecological elements must be considered inseparable in the process of development.

In Bangladesh where poverty is characterized most commonly by the insufficiency of basic subsistence needs, and where the poverty situation is perpetuated by the operative forces of a vicious circle of depleted soils, meagre crops, hungry and incapacitated people, the problem must be solved in the first instance by the production and distribution of adequate food. By feeding the soil in conformity with the laws of nature, the people can be fed; and by feeding the people the vicious spiral of poverty can be broken.

It is further argued that the existing inequality in the social structure which causes relative deprivation and maldistribution of resources in favour of few at the

expense of many, must be corrected and a healthy distribution of opportunities ensured in order to break the social stagnation of poverty. In the light of a comparative study of Indian and Chinese strategies of development, it is concluded that no nation can go far with any other development programme until it feeds its people adequately and regularly with the help of effective reforms in its economic system, social structure and institutions.

Not only is food the first requirement of a growing population, experience has shown that adequate agricultural development, primarily geared to food production, must be seen as a necessary pre-requisite and a permanent accompaniment of industrialization, and general diversification and viability of the economy. Also, it is the only feasible strategy of absorbing the burgeoning millions in the labour force, as well as a sensible way of maintaining the cultural continuity of Bangladesh.

The last section of the thesis is addressed towards the above ends, starting with an indicative chapter on possible and desirable technical improvisation in such vital areas as water management, crop rotation, soil management, agricultural tools and implements, plant care, seed production and introduction of new agricultural crops, etc. The discussion on other measures to meet the top priority need are included in chapters on land reform, rural settlement reorganization, social overheads and economic infra-structure, organizational innovation, education and social reform, and overall settlement policy.

Throughout these chapters the over-riding concern has been that of self-reliance and self-sufficiency as well as of independence - political, economic, technological, social and cultural; and that of situational appropriateness of the recommended measures. However, the section does not pretend to offer the detailed, authoritative knowledge of resources or skills in any particular field needed to draw up an action programme.

The work ends with a small chapter on implementation where the importance of collective awareness and political will, and of cooperation, mutual aid and sacrifice in the current context of Bangladesh is emphasized.

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I. INTRODUCING BANGLADESH



Fig. 1.1 General Map of Bangladesh: Location & Administrative Districts

Chapter 1

PHYSICAL SETTINGS

That part of the world which is now known as Bangladesh was perhaps the least talked-about area in the recent history of worldwide decolonization and emergence of nations, until the heinous atrocities of the Pakistan army compelled the world to pay attention. Although politically new-born, culturally Bangladesh is a very ancient country. Not in the distant past, the land was the sole hinterland of the great metropolis of Calcutta, the very foundation of British political and economic power in India. Yet little attention was paid to what went on beyond the glittering facade of Calcutta. After the partition of the subcontinent into India and Pakistan, the land was labelled as East Pakistan. But in the image-map of the citizen of the world East Pakistan was a nonentity. More often than not 'Pakistan' represented the north-western part of the old Indian subcontinent. Thus time and again the land and its people have been relegated to the back-waters of isolation and non-identity, and never known and understood properly. It is from this point of view that the paramount necessity of introducing the country emerges.

Conventionally, introduction to the country should begin with a description of the physical aspect of the country, continuing with the history of the people, their social structure and economic organizations. But within

the scope of the present work and for its purpose it is necessary to put up the introduction in such a way that would facilitate the understanding of the current problems in the country and their future implications.

Bangladesh, the homeland of the eighth largest nation of the world, is situated in the north-eastern part of the Indian subcontinent between 20° - $30'$ and 26° - $45'$ North latitude and 88° - $0'$ and 92° - $56'$ East longitude roughly. The country is land-locked on three sides having been surrounded almost entirely by Indian territory except for about 175 miles of borders with Burma in the south-east. Total length of the boundary with India is about 2300 miles. On the south of the country is the Bay of Bengal washing a shore-line boundary of 445 miles (see Fig. 1.1).

According to the erstwhile Survey of Pakistan the total area of the country is 55,126 sq. miles (142,795 sq. Km.) including the large rivers and 51,921 sq. miles (134,553 sq. Km.) excluding those large water bodies and the foreshore. In size it is very small in comparison with other countries in south and south-east Asia - it is less than one-fourth the size of Burma, less than one-third the size of Thailand, and less than half the size of Malaysia, yet it contains more people than the population of Burma, Thailand and Malaysia combined together. Density in the country is the highest in the world (500+ persons per sq. Km.) except the city based states like Hong Kong or Malta or Monaco.

The land structure of Bangladesh is typical of

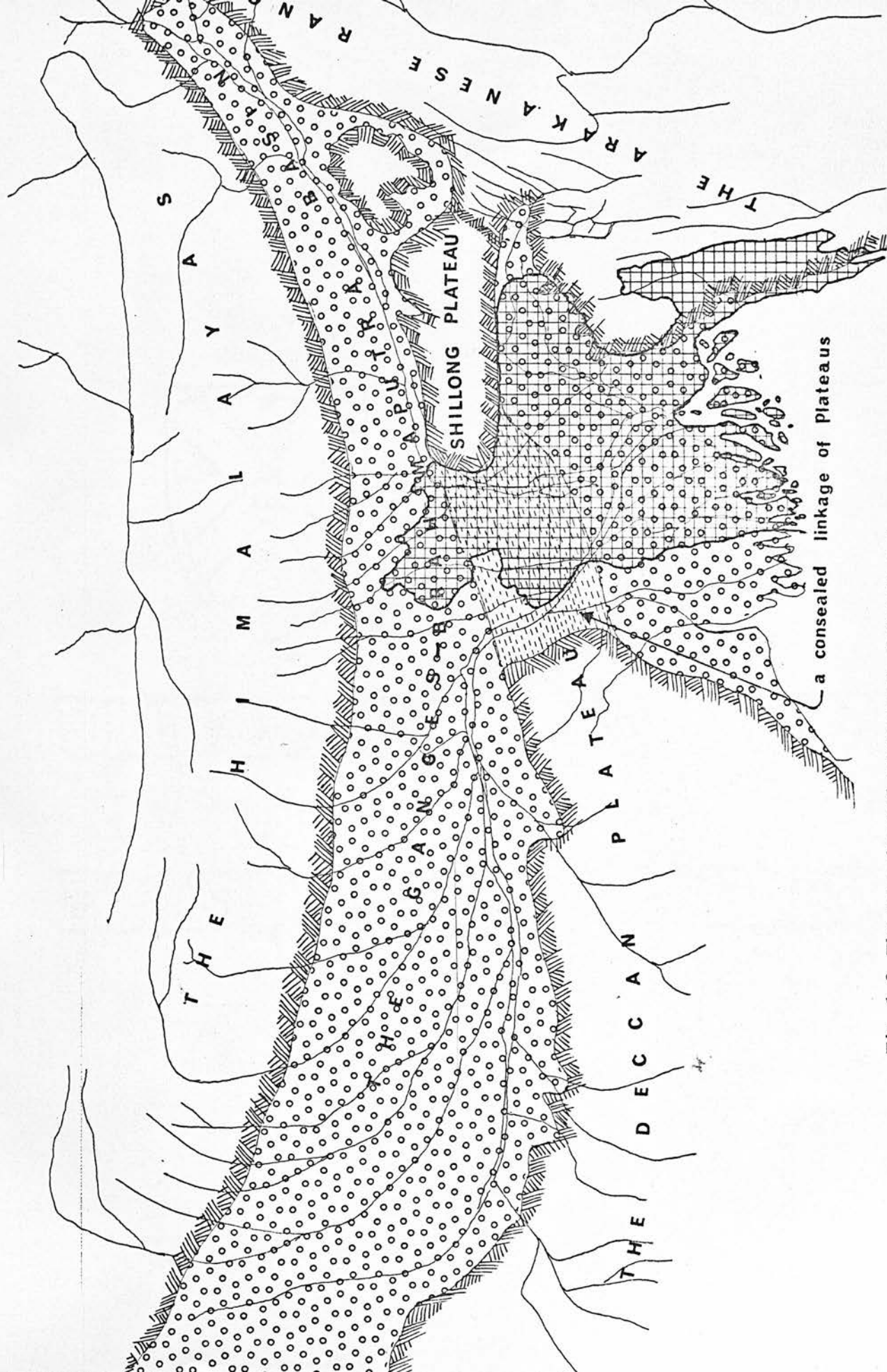


Fig. 1.2 The Geo-physical Framework of Bangladesh

multiple delta formations - 90% of which is formed of river built alluvium of the mighty Ganges, the Brahmaputra and the Meghna systems, 4% is comprised of the young folded hill ranges, and the rest under the rolling rivers themselves and their tributaries and distributaries. The thickness of the alluvium, though not yet measured properly, is believed to be really immense. On the basis of one recently popularized theory* it is derived that the depth of the alluvium is uninterrupted except a narrow stretch of base rock to be encountered several thousand feet below covering the north central part of the country (see Fig. 1.2). However that seems to be of secondary importance. For our purpose only the principal aspect of the geological structure and the landscape morphology may be reviewed in this work in order to provide an understanding of the scope of making a living on the part of the population - how the primary physical endowments have governed the livelihood in the past and to what extent they are going to condition the pattern and range of economic activities in the future.

Physiographically Bangladesh may be divided into three broad yet distinct components. They are (see

* Having re-examined some of the traditional theories on the geology of the Himalayas, the Indian continental massif as well as the plains, Sir Edwin H. Pascoe concludes that the Shillong Plateau in Assam is the continuation of the Indian peninsular massif, the connection being submerged under the alluvium of the lower Ganges and the Brahmaputra. This view is shared by O.H.K. Spate and others also. - See Pascoe, Sir Edwin H.; A Manual of the Geology of India and Burma, Govt. of India Press (3rd edn.) Calcutta 1950, pp. 3-5.

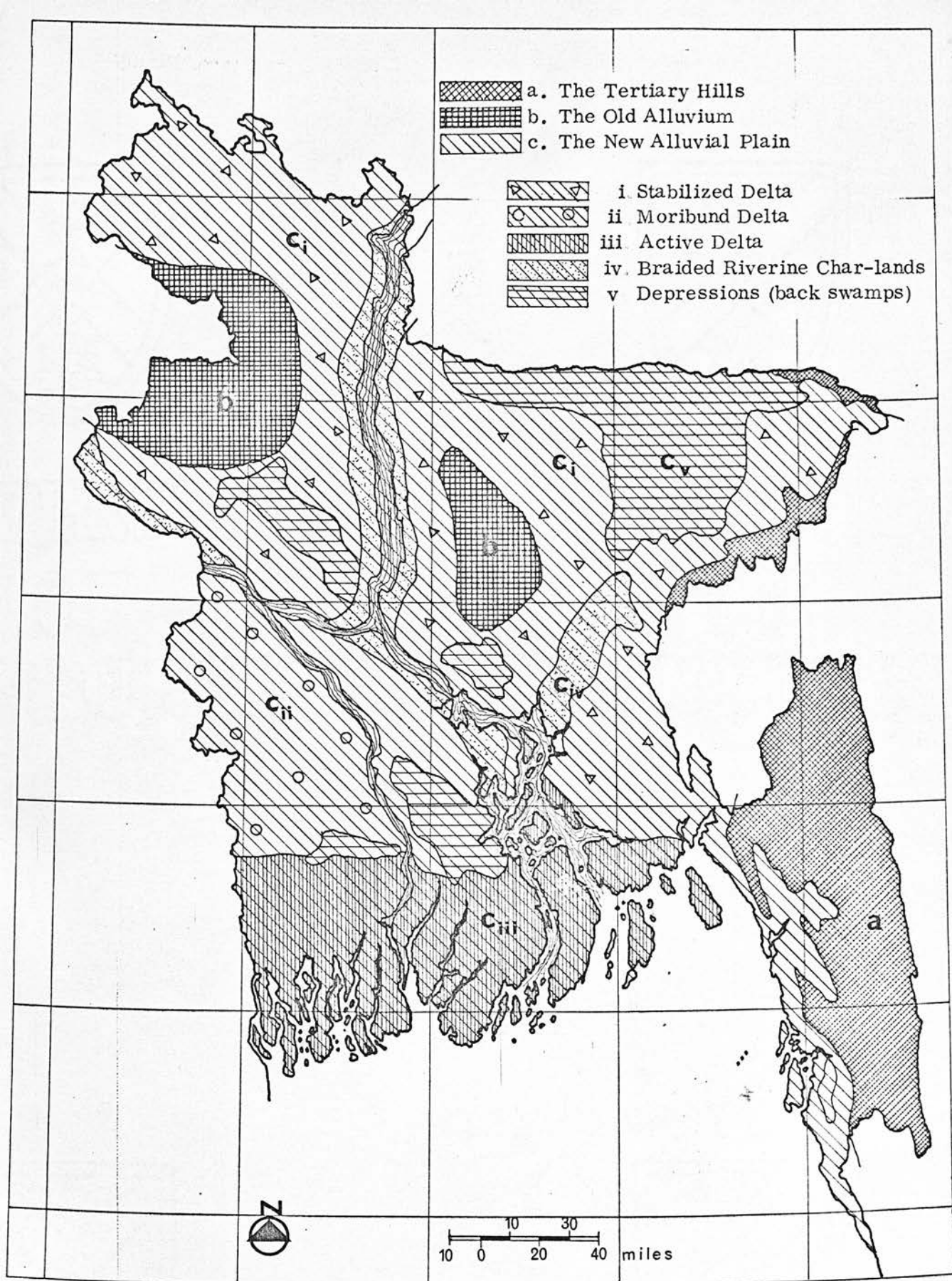


Fig. 1.3 Generalized Physiographic Divisions of Bangladesh

Fig. 1.3):

- (a) The Tertiary Hills;
- (b) The Old Alluvium;
- (c) The New Alluvial Plain.

The outline of the physiographic units presented below leans heavily, it must be acknowledged, on the most basic work of O.H.K. Spate and B.L.C. Johnson, and to a lesser extent on the work of Nafis Ahmed. The purpose here is to construct a geophysical framework against which the present and the future economic pattern is to be assessed.

(a) The Tertiary Hills stand on the eastern and south-eastern part of the country covering Chittagong Hill Tracts, parts of Chittagong and south-eastern Sylhet district. The hills are the extensions of Tripura ridges of India and Arakanese ranges of Burma. The average height of the hills of Chittagong Hill Tract district is about 2000 feet with the elevation generally rising from west to east. The hills of Sylhet district, however, are a series of isolated and elongated ridges hardly exceeding an elevation of 1000 feet, and with no prominent peaks. The ridges generally roll down into hillocks of 200-300 feet locally called Tilla. Between the ridges are river valleys which gradually open up and merge with flood plains and depressions.

In the Chittagong Hill Tract district a number of ranges run north-south giving birth to a typical drainage pattern. The hills rise in tapering masses and are

generally no wider than 100-150 feet at the top. Many of the valleys are flat and broad, interspersed with small water courses. One remarkable aspect to note here is that although the ranges are deeply dissected and their tops stand at an average of 2000 feet, the gradient of the water courses are generally mild such that their hydro-electric potential is lower than what is usually presumable. However, these ranges, in their longitudinal arrangements, quite extensively provide the much too desired bench land features and quick draining for large scale tea plantation. The tapered features are also useful for the plantation of teak wood. By and large the slopes of the hills are covered with bamboo and other tropical monsoonic forests which are used in many places for jhum cultivation - a slash and burn shifting agriculture practised by the marginal tribal communities of the country. The narrow alluvial strips in the valleys, however, provide fields for permanent agriculture.

A few low ranges run in a south-easterly direction parallel to each other along the bay coast of Chittagong district. These lower ranges enclose wide valleys of remarkable fertility and as such hold dense population in the Chittagong district.

(b) The tract of Old Alluvium is formed by early (Pleistocene) deposits. The largest tract called Barind covers an area of about 3600 sq. miles in the districts of Dinajpur, Rangpur, Rajshahi and Bogra. The topography of the region is undulating with large level plains and

gentle gradual slopes rising from 20 to 40 feet above the flood plains.

Another tract of old alluvium appears at around the centre of the country covering an area of about 1600 sq. miles. Extending from the central part of Mymensingh district to the northern part of Dacca, the tract is called Modhupur tract, and is much more distinctive compared to the Barind Tract because much of its surface is covered with stretches of forest of Gajari trees which are excellent wood and timber resources. The soil here consists of red clays - very hard and stubborn when dry. That is why in spite of its low elevation (less than 100 feet) and small size, the tract has played a significant role in the drainage pattern of the central region of the country.

Smaller patches of Pleistocene terraces occur in the Lalmai Hills close to Comilla town. Like the major tracts of old alluvium the soil here is lateritic, red, clayey and leached; and nowhere does the elevation exceed 40 feet above the plains. However, the area is very small and as such plays an insignificant role in the geo-cultural landscape of the entire country.

Geo-morphologists believe that the tracts of Old Alluvium in Bangladesh have been slightly deformed by faulting and tilting which have had an influence on their drainage pattern, and may also have been responsible for setting these areas a score or so feet above the surrounding younger flood plains. Perhaps it is this

relative elevation which has prevented them being covered by more recent alluvium. Lacking exotic sources of plant nutrient in the medium of flood-water, the soil becomes leached and eventually results in aerial differentiation of cropping and agricultural land-use.¹

(c) The vast New Alluvial Plain is the dominant feature of the topography of Bangladesh. This flat, even, alluvial plain stretches from the northernmost tip of the country to the bay coast covering overwhelming portions of the national territory. The entire plain slopes towards the south at an average rate of five inches per mile, the southernmost 50 miles or so being almost at sea level. Many places even 100 miles away from the coast are only 30 feet above sea level.

The plain is interlaced by numerous rivers, their tributaries, distributaries and back swamps - the predominant system being that of the Ganges (local name Padma), the Brahmaputra (Jamuna) and the Meghna. The load of silt and mud carried by one river varies from that of another and hence the morphology of different river basins, their levees and back swamps varies. On account of this process, minor physiographic differences have appeared on the otherwise monotonously uniform plain. The following regions are identifiable on the basis of their differential morphologic characteristics:

¹ Johnson, B.L.C.

- (i) Stabilized Delta;
- (ii) Moribund Delta;
- (iii) Active Delta;
- (iv) Braided Riverine Char-lands;
- (v) Depressions (Back swamps).

(i) Since an overwhelming part of the erstwhile Bengal is a delta region slowly emerging from the sea and later built up by the Ganges, the Brahmaputra and their distributaries, substantial portions of the levees have become stabilized by now varying of ~~the~~ course in their age. The stabilized delta of recent and remote origin constitutes an identifiable feature in the central region of the country around the confluence of Padma and Jamuna, as well as in the northern region covering the older river basin of the Atrai and the Teesta, and in the north central region along the course of the old Brahmaputra. In this tract of stabilized delta the main channels are reasonably stable and levees are very broad. Yet the stabilized levees of the northern region are distinguishable to the extent that they are not subject to annual flooding, and have a steeper gradient than the rest of the stabilized delta. For this reason the northern delta is given a separate identity, viz. the North Bengal Plain (Nafis Ahmed), the North Bengal Sandy Alluvial Fan (B.L.C. Johnson). While the central and the north central zone of stabilized levees are still inundated fully for at least a few days every year, covering Mymensingh, Dacca and Faridpur districts and parts of Rangpur, Bogra, Pabna,

Sylhet and Comilla, this zone constitutes the agricultural core-land of Bangladesh. Due to the annual flooding the land is left covered with a fertile silt and fit to produce two major crops of rice and jute.

(ii) The area south of the Ganges (Padma) and west of Gorai-Madhumati may be designated as the Moribund Delta because of its dead and decaying channels. In this area many of the channels are choked or completely silted up. The land surface here no longer receives the overflow of the Ganges water. The area is somewhat higher and free from annual inundation. Hence this part of the delta is starved of natural annual fertilization.

(iii) The Active Delta refers to the area east of the Madhumati where the land surface is lower and still in the process of being built up by the dynamic action of the rivers on the one hand and those of the tidal waters on the other. The land surface is intersected by channels, large and small, in all directions, and together they inundate the entire area during much of monsoon. New lands are being formed under the sea through a very gradual process of accretion. In the western part of the active delta, saline tide has the upper hand due to reduced discharge from the moribund upper region. The nearly defunct river mouths here are encountered with continuous tides. As a result a labyrinth of small islets and creeks have appeared in this region which is now covered with very dense mangrove forest. The estuarine islands of Bhola, Hatia, Sandwip also belong to the region of Active Delta.

(iv) The riverine actions give birth to another dynamic process of land formation inside the plains - that is the braided char-lands. The charlands are the areas of fresh silt exposed at low water, and are very prominent features of the landscape along the river courses throughout the plains. These char-lands may be referred to as the active flood-plains around which the major rivers are found to shift and readjust their flows ceaselessly. The most extensive char-lands are found in the course of Jamuna and Meghna, and to a lesser extent in Padma/Ganges. At any rate these lands are easy to cultivate and fabulously fertile.

(v) The back swamps of the major rivers and perhaps tectonic actions have created several major depressions in the plains which are locally called Bil or Haor. The expanse of these depressions varies, the largest being the Meghna depression covering substantial parts of Mymensingh and Sylhet district. The depressions also vary in depth and appearance. Hence some of them provide fishing ground for half the year and cropping in the dry seasons when they dry up. Others provide fishing round the year and partly cropping in the dry season when parts of their beds become cultivable for planting wet rice. In any case, these depressions have not attracted concentration of settlements due to their fluctuating water levels and the problem of transportation associated with the phenomenon.

The physiographical features described so far must also be seen in a dynamic relationship with other environmental elements. As stated in the beginning, the predominant feature of the total landscape, i.e. the alluvial plain, is built by the mighty river systems. Therefore a closer view of their interaction is warranted in order to understand their effect on the economy and culture of the people.

The Rivers and their Physiography

Rivers are the most dynamic elements in the environmental landscape of Bangladesh. Snows melting in the central and eastern Himalayas as well as the precipitation at the foothills of those regions combine into the Ganges, the Brahmaputra and the Meghna. These mighty rivers wash the surface of Bangladesh with their colossal volume of water, and finally open out into the Bay of Bengal. These rivers along with their innumerable tributaries and distributaries meandering through landscapes have not only shaped the land form, they have also brought about one of the most extraordinary system of drainage and navigation in the world (see Figs. 1.4 and 1.5).

The Ganges-Padma system has been described as the pivotal system (N. Ahmed) of the deltaic rivers in Bangladesh. The river carries immense quantities of water when it enters the territory of Bangladesh and subsequently splits up into innumerable channels. Constant shifting of channels and frequent bends cause

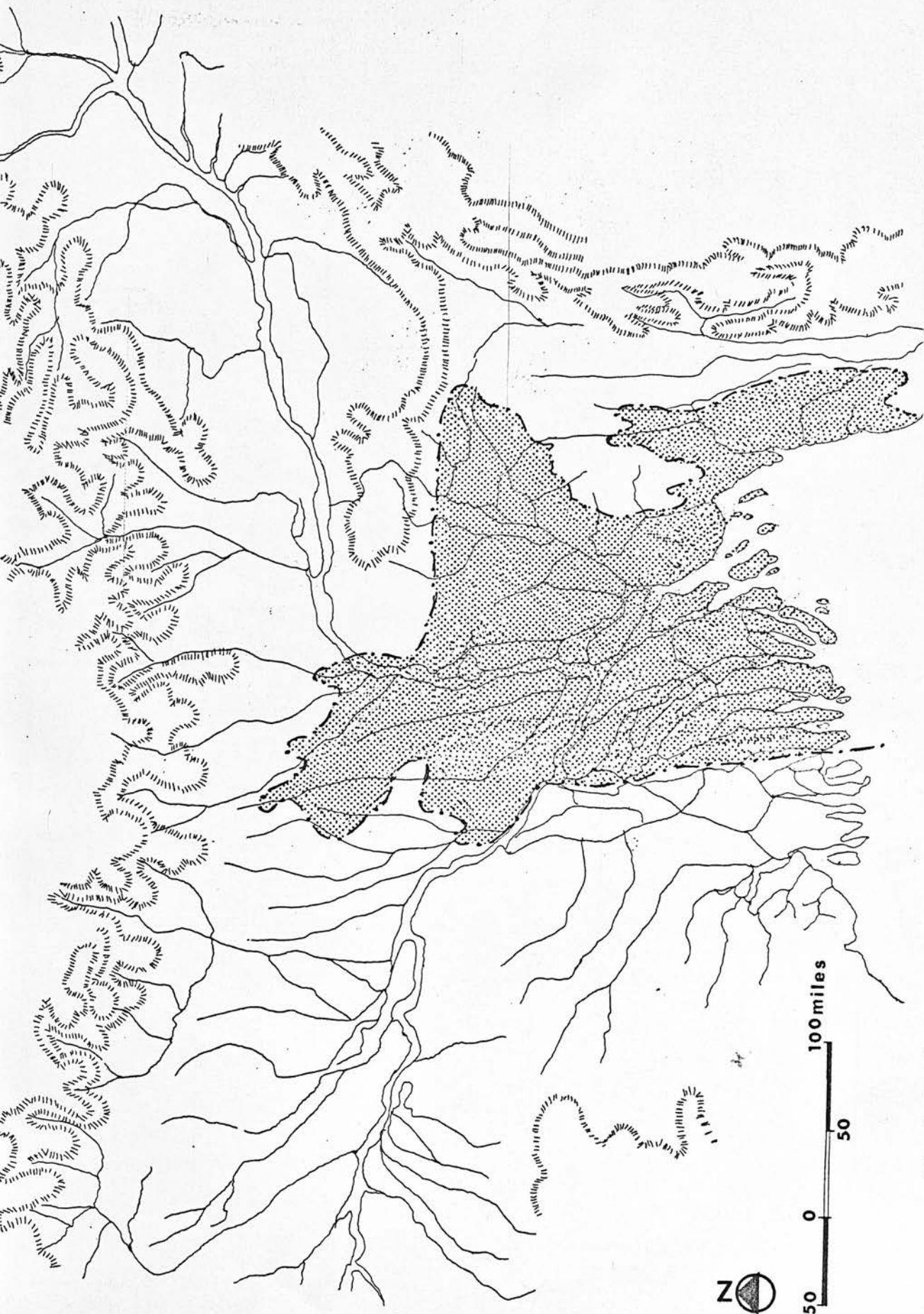


Fig. 1.4 The Regional River Systems influencing the Drainage Pattern of Bangladesh

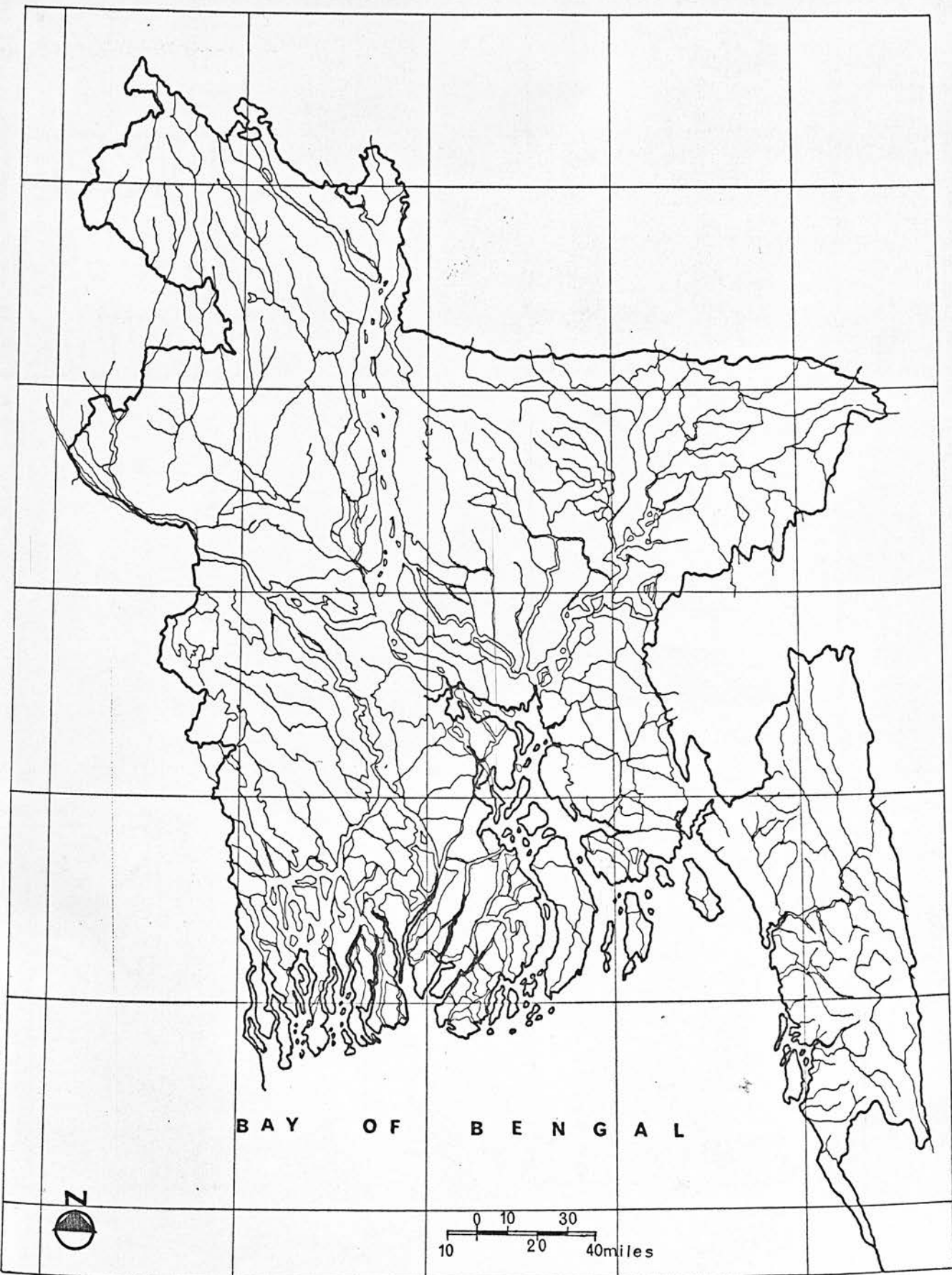


Fig. 1.5 River Systems in Bangladesh

silt formation year after year. The main channel turns into a broad waterway after its union with the Jamuna (Brahmaputra). Still the process of construction and destruction goes on further down making incursions in one place and formations in another. This process involves the livelihood of people as well as their settlements in both positive and negative ways. However, its distributaries flowing mainly through the south-western part of the country have lost much of their early vigours.

The Brahmaputra carries water from the eastern Himalayas and the Assam Hills where the rate of precipitation happens to be 80 inches per year in the average as compared to 40 inches in the mid-Ganges valley. As a result it carries more water and the velocity of the stream is higher. Another characteristic of this river is that it is very wide measuring 3-4 miles even in the dry season and the flow of its main channel is unpredictable, oscillating between the right and the left bank from year to year. In the process a continuous cycle of land formation and erosion is created which renders permanent settlements or structures on its banks quite unfeasible. Yet it is the spine of the northern and central regions of Bangladesh.

The major flow of the Meghna is formed by the union of streams carrying water from Meghalaya, the region of heaviest rainfall in the world. The Meghna is well known for its depth and notorious velocity, and as a matter of fact navigation by the average country boats

is extremely risky except during the period between November and February when the river remains relatively calm. At many points the river becomes so wide, particularly in the monsoon, that the opposite bank cannot be seen. The estuary of the river is remarkably wide, as a result tidal effect is felt very distinctly up to an unusually great length upstream. Sand bank formation is a typical feature of this river also. On the whole the river is of great commercial importance in spite of its furious nature.

Of the river systems of the plains described above those in the northern and western parts of the country demonstrate distinctive features in being more stable. This refers particularly to the tributaries and distributaries of the Ganges. Although the system exhibited dramatic changes in the past, it carries much less load at present and hence the stability. This relative morbidity of the system has inevitably affected the economic activity pattern of the region in an adverse way in recent times. It is unanimously agreed in the country that the northern and western regions need more attention so far as irrigation is concerned.

The rivers of the central and eastern parts of the plains, on the other hand, are very active and dynamic, at once working as bane and boon to the life and economy of the people. They enrich their valleys through the deposit of silts. Yet flooding seems to be a normal feature in their hydrology. If the flood is in time

and the depth and duration of inundation is within normal limits, harvest would be bounteous, otherwise damage and destruction are inevitable. Similarly, the process of formation and disappearance of char lands (silt formation and sand banks) oscillates people between hopes and despairs - they bring in bounty yet are sources of violent rivalries and endless litigation between claiming parties. Above all, their unleashed energies tend to alter the pattern of the space economy unduly by destroying points of great commercial importance or transport foci~~x~~. Taming of this wild system is therefore of major importance.

The rivers of the hills present quite a different picture. Although they drain out directly into the bay, due to their short travel from the point of their origin in the nearby hills, they are not navigable for most of their length. Hence their commercial importance is negligible. But their hydro-electric potentials can hardly be doubted.

Soil Characteristics

As indicated all through the foregoing descriptions, geomorphology of regions and physiography of rivers are inseparably connected in the deltaic Bangladesh. Hydrology has interacted on physiographic regions ceaselessly and has thus brought about certain soil properties (corresponding to those regions) which in turn have conditioned economic activity patterns in the past and

will continue to do so in the future as well. It is well documented that due to the different origins, course and nature of the rivers, their silt deposits vary in amount and quality. For example, the Ganges brings forth an estimated 500 million tons of silts annually while the Brahmaputra brings in about 900 million tons per year. The deposits of the Ganges have higher iron contents but are poor in organic matter and nitrogen while those of the Meghna carry substantial proportions of decayed vegetable material from the swamps of its valleys. As a result, cultivation on the land formations along the Meghna is quicker, easier and more rewarding than that on the Padma (lower Ganges). Again, the new alluvial soils are deficient in phosphoric acid, nitrogen and humus particularly due to the process of continuous flushing every year. The lime content varies from area to area but there is generally more lime in the mature regions. Potash content is generally satisfactory but is found in higher proportions in the coastal area where the tide enriches the potash content in the soil.

Professor Nafis Ahmed's* classifications of soils in Bangladesh on the basis of their differential physical and chemical properties seem to be quite satisfactory in that they bear close correspondence to the existing physiographic regions as well as the identifiable crop distribution pattern and crop association regions. The soil

* Ahmed, N.; An Economic Geography of East Pakistan, Oxford University Press, London (2nd edn.) 1968, pp. 61-69.

regions and their characteristics may be described as follows:

I. The Red Laterite Soil: Characteristic soil of the Old Alluvium of the Barind and Madhupur tract. The soil is rich in iron and contains other ferrogenous concretions such as aluminium but is deficient in organic matter, nitrogen. Hence the general level of fertility of this soil is low. Ploughing in this soil is very difficult because it is very hard when dry and extremely sticky under watered conditions. The soil has however a high phosphate fixing capacity.

II. Sandy and Clayey Loams: Characteristic of the large area of the plain. The soils generally occupy tracts away from the inundated silts. Farthest from the levees and towards the depressions, they merge into clay. The soil is replenished every year by fresh deposit of silt carried down by the flood waters. By virtue of their higher silt content, these types of soils are capable of bearing varieties of crops both in the dry and the wet seasons.

III. Silt or Heavy Silt Loam: Characteristic of the active-delta and braided river courses, these are newly formed soils and are found in the inundated tracts of the great rivers. The soils are of great fertility and are easy to plough. These soils also are capable of producing a great variety of crops, provided the extent of their inundation is controlled.

IV. Alkaline or Saline Soils: The lower part of the

moribund-delta as well as the estuarine island and the stable coast of Chittagong are characterized by this type of soil. Due to their high alkaline contents and low proportions of organic matter and nitrogen, they are very poor agricultural land. Salt-efflorescence occurs in many places while in still other places the phenomenon of salinity and acidity are found to concur. ~~(together)~~. Reclamation however is not very difficult.

V. Clayey Soils: This soil is characteristic of the depressed regions of Rajshahi, Pabna, Bogra, Sylhet and Mymensingh. The clayey bed of these depressions is non-porous and holds water. The seasonal water logging hampers cultivation, and as a result cultivation is limited to a single crop. However, the problem of seasonal water logging is compensated by the opportunities of fishing.

In the southern part of the country water logging and marshy conditions have brought about a large tract of peaty soil. These deeply moist soils are suited to the cultivation of lowland rice.

Climatic Features

Although the country is situated much above the equator and the larger part of the country falls in the temperate zone, the climate is mainly tropical - moderately warm, equable and humid dominated by monsoon rain. The great Himalayas protect the country from the cold northern wind. On the other hand, the monsoon wind blowing from the tropical bay injects tropical heat into the area.

That is why Bangladesh enjoys a tropical climate in spite of her location at least partly in the temperate zone.

Of all the climatic elements interacting with the environment in Bangladesh, rainfall is the most important. Rainfall figures are high almost everywhere except a longitudinal slice in the western part of the country - the mean annual fall being less than 66 inches in the western part and gradually moving upwards in the eastern part, culminating in more than 200 inches in the north-eastern part in the district of Sylhet (see Fig. 1.6). These apparently impressive figures are very misleading because the seasonal distribution is very uneven. The winter rain is so scanty and unreliable that it should be discounted altogether. A comparison of the mean values for monthly rainfall in five stations representing four corners and the centre of the country makes it clear that the problem of seasonality of rain exists everywhere in the country (see Table 1.1). The overall rainfall pattern is such that it starts gradually building up from March, culminating in June/July/August and then falling off rapidly in October, nearly stopping by November.

Precipitation is mainly brought by the Monsoon (June to September) and partly by the Norwester (March to May). Although the Norwester rainfall is about one-fifth of the total precipitation of the country, it is of crucial importance to the economy of Bangladesh. The planting of jute and a crop of rice is dependent on the timely onset of the 'little rains' brought in by the Norwester. On

Table 1.1

Mean Monthly Rainfall (in inches)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Cox's Bazar	0.14	0.47	1.49	4.20	12.74	31.14	35.52	27.75	15.25	7.16	3.26	0.98
Sylhet	0.51	1.31	5.46	13.37	20.84	32.48	27.10	25.46	20.82	9.92	1.29	0.24
Dacca	0.33	1.18	2.45	5.18	9.67	13.30	12.74	13.20	9.54	4.74	0.83	0.20
Dinajpur	0.36	0.61	0.69	2.14	7.34	13.64	15.47	13.71	13.05	4.75	0.44	0.06
Satkhira	0.38	1.03	1.84	2.93	6.87	12.20	13.50	11.57	8.78	4.50	0.74	0.17
Average for Bangladesh	0.33	1.00	1.79	4.19	9.50	15.83	15.96	15.05	11.33	5.53	1.03	0.21

Source: (i) Ahmed, N., op. cit., p. 58.

(ii) Ahmed, K.; Agriculture in East Pakistan, Ahmed Brothers Publications, Dacca, 1964, pp. 20-21.

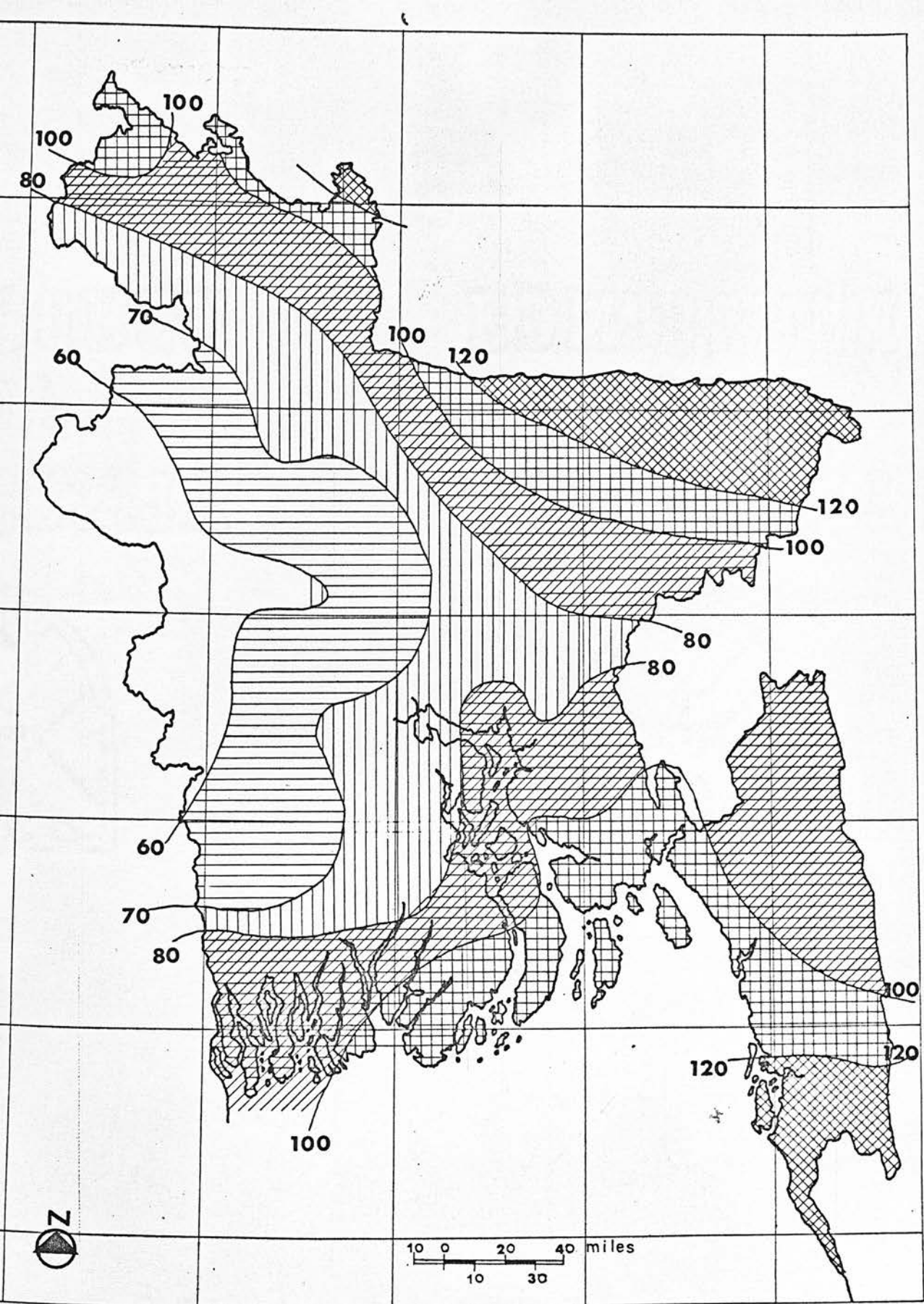


Fig. 1.6 Isohyets of Mean Annual Rainfall (in inches)

the other hand, the character of the Norwester is such that it often causes damage to life and property.

Violent thunderstorms and their destructive effects are special features and uprooted trees, blown off roofs, capsized boats and trampled crop fields and orchards are frequent consequences of the Norwester.

Heavy downpour, strong squally winds are characteristic of the Monsoon. Contrary to popular belief monsoon rainfall is uneven in character and the region of heaviest precipitation along any particular track also experiences variance. Timely onset of the monsoon and its distribution most directly affects the major cereal production. Untimely incidence or abnormal excess of rainfall both are equally damaging from the point of view of crop production. Prolonged break and early cessation also have been found to cause considerable economic loss. Unfortunately all these undesirable phenomena are characteristic of the monsoon. Although the recorded variability of rainfall is about 15 to 30 per cent, this range of variation in itself tells upon agricultural operations severely, since there is no other arrangement for substitution.

Another horrifying aspect of the monsoon period is the occurrence of cyclones which originate in the depressions formed in the Bay of Bengal during the beginning (May - June) and ending of the season (October - November). These cyclonic storms are accompanied by tidal bores which severely affect life and property particularly along the coast.

In summary, it may be recapitulated that Bangladesh is largely a deltaic plain formed by the vast alluvial deposits of the three mighty river systems of the sub-continent. There is a stretch of tertiary hills on the eastern outskirts of the country. Except for these tertiary hills and the tracts of old alluvium, the country is a flat plain criss-crossed by the three big rivers and their innumerable tributaries and distributaries. The behaviour of the rivers is of functional importance in shaping the economic life of the people. In their normal behaviour the rivers are an asset; in their eccentricities they are sources of miseries. In addition to drainage, the rivers provide a year-round supply of fish, facilitate cheap and well-covered channels of communication and - most important of all - serve as an agent of natural fertilization for most of the plain from year to year.

The recent alluvial plain is rich in fertility while the old alluvial tract is poor in soil characteristics. The inland natural depressions have seasonal fertility. Peaty soil predominates the southern part of the plain while the coastal areas suffer from the problems of salinity and alkalinity.

The most important aspect of the physical features of the country is that geologically being recent the prospects of minerals are nearly absent. Geographic features have so far offered mainly an abundance of alluvial soil and water as the only basic resources to

sustain any system of life and economy on the surface of Bangladesh.

Climate is moderately hot with no wide variation either in time or in space, and rainfall is more or less adequate throughout the country. However, the amount and distribution of rainfall is of much more crucial importance than the temperature. There are two rain periods: the norwester and the monsoon, both of which demonstrate a variety of meteorological phenomena like untimely fall, scanty fall, excessive fall, early cessation, prolonged break, thunderstorms, cyclones, hailstorms - all of which have adverse effects on the life, property and economy of the population. Although temperature permits cropping round the year, it is the water regime which plays the decisive role in the basic production pattern of Bangladesh.

Chapter 2

SOCIAL HISTORY

Much of the precise origin of the people of the lower Ganges-Brahmaputra delta remains shrouded in the oblivion of unrecorded history. Admittedly, research into the social conditions and institutions, law and administration, polity and social relations in ancient India in general is beset with practical limitations. Scholars concerned have had to confine their explorations mainly within the various branches of ancient Indian literature, namely: the Epics (the Ramayana and the Mahabharata), the Dharmasastra, the Arthasastra, the Nitisastra, etc. On the basis of such sources of information F.J. Monahan chose to designate the rise of the Maurya Dynasty as the starting point of the early history of Bengal.¹ The Maurya Dynasty was founded by Chandragupta, an Aryan who is believed to have ascended to the throne at Magadha (Bihar) in 321 B.C. In order to portray the early socio-political picture of Bengal, Monahan started with the analysis of the Magadhan empire under the assumption that during the Maurya period, as often in later times, Bengal and Bihar were in close political association and as such similar political and social conditions might have prevailed in both the

¹ Monahan, F.J.; The Early History of Bengal, Oxford University Press, Humphrey Milford, 1925. Monahan emphasized that in the present state of knowledge, it is the earliest event in the history of Bengal to which an appropriate date can be assigned.

countries. But Monahan's assumption should not lead one to believe that the early community of Bengal had no cultural heritage when they came in contact with the Aryan culture of Magadha. As a matter of fact historians have inferred from the references in the later Vedic literature that there were five nations inhabiting the countries to the east and south of Magadha, namely: Anga, Vanga, Kalinga, Pundra and Sumha. Sufficient evidence is also available to believe that the later name Banga or Bangala is derived from the word Vanga of antiquity. It is therefore essential to look into the pre-Aryan Vanga in order to understand the complete cultural heritage of the people of that part of ancient India which corresponds to what is now called Bangladesh.

Pre-Aryan Vanga

B.C. Majumdar, in his intensive search for the origin of Bangla (Bengali) language, went deep into the ethnology of the people who speak the language. He concluded that the Aryans did not come into any real contact with Vanga until the 6th century B.C. Scrutinizing some statements in the old Dharmasutra, Majumdar infers that the Aryans of the 'holy midlands' (Aryavarta or the Aryan Pale) had neither the occasion nor the liking to take any notice of the eastern tract of the 'barbarians', although an appreciable number of the Aryans might have started to settle in Vanga by 600 B.C. On close examination of some records of non-Aryan activities of the time Majumdar

postulates that when the Aryans refrained from taking any account of the people outside their holy pale, the so-called 'barbarian' people of Vanga founded a powerful colony in Annam of farther India.

Extending the enquiry further into the traditional and legendary accounts of Annam, Majumdar found out that the chief of the people who founded Annam and became the king bore the name Luck-lom, and that province of India to which Luck-lom and his people belonged was called Bong-long. Majumdar thus establishes that the name of the land which was then unknown in Aryavarta, was Bong-long (the original form of Bangla) and the people of Bong-long were known by the name Bong.²

This view corroborates with a more authentic study by Dr. S.K. Chatterji. From his erudite scholarship Dr. Chatterji points out that at a time when the Tibeto-Chinese tribes had not yet arrived on the lands in

² Majumdar, B.C.; The History of Bengali Language, University of Calcutta, 1920, p. 28. As a philologist Majumdar believes that the compound letter or suffix 'long' was added to Bong to signify the country belonging to the Bong people, and that this 'long' is the Annamese form of non-Aryan suffix 'la'. And further that not only the name Bong or Vanga is the name of the tribe, but the word Bangla itself is as old as the word Vanga. He asserts that the word Bonglong or Bangla was the name of the same indefinite portion of the 20th century Bengal at least as early as the 7th century B.C. Majumdar further holds that the sway which the people of Mekhong valley established once in the eastern Bengal is perhaps commemorated in some geographical names. He suspects that the river Meghna is the stylized form of the name Mekhong. As to the Indo-Chinese origin of the name Dacca (the present capital of Bangladesh) Majumdar entertains no doubts: the word 'Dhakka' means old Ganges in the language of the people of Mekhong valley, and since Dacca is situated on the old Ganges, the connection is obvious - so argues Majumdar.

farther India, and those countries were inhabited by only the Mon-khemr peoples, Dravidians from Vanga and Kalinga were emigrating into these lands and becoming the ruling race there.³ In his exhaustive enquiry into the class of speech that prevailed in Vanga before the advent of the Aryan tongue Dr. Chatterji has in fact unearthed many clues about the ethnic origin of the people now speaking Bangla. Scrutinizing some name places of Bengal he has found out distinct Dravidian words. He thus concludes that an investigation of the place names of Bengal as in other parts of Aryan India, is sure to reveal non-Aryan speakers, mostly Dravidian, all over the land before the establishment of the Aryan tongue.⁴

On the basis of the above expositions, it must be concluded that the Vanga people were of Dravidian stock and they came in contact with the Mongolian people before they were Aryanized. In fact Vanga provided the stepping stones for the Aryanization of farther India and herself became the ground of hybridization of the Dravidian, Mongolian and Aryan traits.

These so-called 'pre-historic' accounts correspond

³ Chatterji, S.K.; *The Origins and Development of Bengali Language*, Calcutta University Press, Senate House, Calcutta, 1926, p. 68.

⁴ *Ibid.*, p. 67 - what is more exciting in Dr. Chatterji's contribution is that he has tried painstakingly to prove that Vanga refers to much of what came to be known as East Bengal at a much later date. This position is unambiguously endorsed by Dr. B.C. Law in his unique treatise on the tribes of ancient India. For confirmation see Law, B.C.; *Ancient Indian Tribes*, Vol. II, Luzac & Co., London, 1934.

to the Vedic references where the names of Anga, Vanga, Kalinga have been associated with the inhabitants of non-Aryan origin. Obviously, therefore, it will be a colossal mistake to label the beginning of the Aryan civilization as the sole starting point of the cultural history of Bengal. It will be equally wrong to assign such romantic terms as 'pre-historic' to all pure Dravidian activities. In Bangladesh, history began before the invasion of the Aryans. Instead of being indignant of the Dravidian heritage the Bangalees of today should be proud of the ethnic records, for those who form the bulk of the population today are the descendants of the Vanga people who founded once a ruling house in Annam in farther India.

Unfortunately very little is known about the pre-Aryan for various reasons.* However, Professor Chatterji holds that the people of Vanga possessed great skill in some arts and crafts, and in the support of his view refers to the Artha-Shastra of Kautilya where silk and other stuffs made in Vanga has been praised. This view

* The surge of Aryanization was so devastating that except the anthropogenetic and linguistic heritage, perhaps nothing else of the non-Aryan legacy remained unswept. Besides the fore-runners of learning and education in ancient India were the Brahmans exclusively who remained unmixed Aryans and glorified themselves by glorifying the Aryan culture on the one hand and despising the Dravidian culture on the other. Thereafter researchers and academicians of recent times suffered from an obsession accrediting the Indo-Aryans for anything that was best in ancient Indian culture and thus leaving the quest for Dravidian glories into relative neglect. For further confirmation of this point see Iyengar, T.R. Sesha: Dravidian India, The India Printing Works, Madras, 1925.

is in conformity with the general stereotype of Dravidian culture that it is more artistic.

Aryan Vanga

Although the Dravidian India was first conquered by the Indo-European (Aryan) immigrants at about 1500 B.C. the lower Ganges valley being far from the initial point of penetration was only gradually subjugated to the Aryan kingdom. On the basis of epigraphical records and other historical evidence it is concluded by many authorities that north and west of Bengal contiguous to Magadha were under Asoka in the 3rd century B.C., and from that time onwards one can assume that Aryanization of Bengal commenced on a progressive basis. When Fa-hien came to Bengal in the beginning of the 5th century A.D. he described the country as flourishing in Aryan learning and culture. By the first half of the 7th century A.D. the indigenous reaction to Aryanism (Brahmanism) was already manifest in the appearance of Jainism and its coexistence alongside Brahmanism - a fact left recorded by another Chinese traveller Hiuen Tsang.

The Dravido-Aryan cultural rendezvous continued for about a thousand years when Bengali language and culture emerged uniting the various dialectical areas. A new speech entered into being in the 10th century A.D. to give expression, later in its life, to some of the highest flights of human spirit in the regions of poetic

imagination and perception.⁵ Later, under the Muslim rule those linguistically united Aryanized tracts received a common name Bangalah⁶ which in fact was an extension of the name Vanga.

So far the early social conditions, institutions and polity of the Aryanized people of Vanga are concerned, much have to be reconstructed from the accounts left in Kautilya's Arthashastra. The Arthashastra is an exhaustive treatise on all aspects of society and its institutions in the day to day operation. The whole work provides us with a shadow picture of the social conditions and institutions which prevailed in the Maurya period, and later on continued in the nearest regions such as Bengal. The credibility of descriptions contained in the Arthashastra has been enhanced by the recorded evidence of the 4th and 5th centuries A.D. through the 7th and 8th centuries A.D. which bear close resemblances, in fact appear to be a clear heritage of what is projectable from the Arthashastra. In the absence of any other source more comprehensive, the following picture of the Aryanized Vanga community may be

⁵ Chatterji, S.K., op. cit., p. 81 - Tracing the earliest extant specimens of Bangali, Professor Chatterji concludes that by the middle of the 10th century the Bengali language may be said to have become distinctive as the expression of the life and religious expressions of the people of Bengal.

⁶ According to the celebrated historian W.W. Hunter, the name Bangalah was first used by Rashiduddin (1247-1318 A.D.) and his contemporary Marco Polo (1250-1323 A.D.). Under the early Muslim rule it applied specifically to the deltaic region like the Vanga of antiquity but later conquests included the land east of Brahmaputra as well. - Hunter, W.W.; Imperial Gazetteer of India, Vol. II, Trubner & Co., London, 1881, p. 2.

reconstructed from F.J. Monahan's account of the Arthashastra:

The picture portrayed is that of a population poor and simple in their habits yet neither barbarous nor degraded, but capable of organization and cooperative efforts and of producing work of high artistic merit. The sculptured relief of the period suggests that then, as now, the peasantry lived in thatched cottages with earthen or mat walls, wore scanty clothing, used little furniture and practised a primitive agriculture.

The form of government described is autocratic but with paternalistic sense of responsibility. The whole society and government was marked by extreme veneration for religion and custom and the corresponding social hierarchy of socio-religious functionaries.

Society itself was pluralistic. Racially the social groups were divided into two main lines: the Aryans and the Mlecchas (the indigenous Dravidians).^{*} The initial plan of the Aryan social order consisted of four castes: Brahman, Kishatriya, Vaisya and Sudra. These primary castes were followed by a number of other mixed castes.

The system was propagated by the Brahmans on the strength of theocratic arguments and they assumed the

^{*} J.C. Jain points out that according to the Vedic literature the characteristic physical difference between the two races was that of colour of the skin. The Aryans who were the conquerors were of fair complexion and the indigenous population who formed the subjugated race had black complexions. - Jain, J.C.; Life in Ancient India as depicted in the Jain Canona, New Book Co. Ltd., Bombay, 1947, p. 134.

paramount position in the hierarchy. Having assumed the position of priests, the Brahmins advocated theocracy by virtue of which no human power could rightfully challenge the godly supremacy of the Brahmins. In order to make the foundation immovable whereby the pre-eminence of their priesthood would be ensured, the Brahmins made all possible efforts. They defended the doors of knowledge jealously as a caste privilege and every effort was made not to spread the knowledge among the lower classes, and thus perpetuate their own privileged position. Thus, having established their superiority, the Brahmins enjoyed innumerable concessions such as free land, immunity from taxes, indemnity from capital punishment, enjoyment of gifts, etc.

The Kshatriyas on the other hand monopolized on the art of war and expansion of political power. The Vaisyas were the landowners and tradesmen collectively forming a mercantile class. The Sudras formed the bulk of the agricultural workers, crafts workers and labourers.

Below these classes were the Mlecchas (the indigenous Dravidians) who were considered by the Aryans as wicked and cruel-hearted barbarians speaking an unintelligible language. This group along with their professional sub-groups such as the peacock tamers, hunters, acrobats, barbers, fishermen, washermen, cobblers, were despised by the conqueror castes and left outside the main stream of the society.

The earliest account of the Aryanized Vanga thus

provides the picture of a stratified society. That the stratification is the creation of the immigrant Aryans has been proved beyond any doubts by many authorities on ancient India. The Aryan customs prepared the way for the caste system which was gradually institutionalized by the works of the Brahman priesthood.⁷ The victor Aryans tied the nobler occupations with their own race and assigned the menial ones to the subjugated Dravidians. As colonization got roots, the influence of Brahmanic practice of castism found its root in the Dravidian soil. Eventually with complete Aryanization of the indigenous society, many of the non-Aryan tribes were turned into occupation castes who, ever since, maintained a stratified relationship on the basis of their unalterable division of labour and occupation. The unalterable division of labour crystallized the social order into fixity and held the society impotent of any mass social development.

The basic unit of social organization and administration was the Grama (village). Although the Grama did not possess the characteristic fortification of a Nagara (city), it dominated the entire social policy of settlements and public works. A large number of families^{*}

⁷ Masson-Oursel, P. et al.; Ancient India, Kegan Paul, Tench, Trubner & Co. Ltd., London, 1934, p. 83.

^{*} The Arthasastra is reported to have mentioned that the villages should be formed of not less than one hundred and not more than five hundred families of Sudra peasants. The boundaries of each village should extend to a Krosa or two and the villages should be so arranged as to protect one another.

were reckoned as constituting a village. The administrative organ of the village was called Sabha (assembly) which was manned and participated by local people under the leadership of local elders. Around the village lay its agricultural land, woodland and uncleared jungle.

Regarding the distribution of arable land the laws were very rational and straightforward. A person who reclaimed waste land acquired a right to hold it as long as he continued to cultivate it, but would lose the right if he ceased to do so; and the land would be allocated to another peasant willing to work it. Any person to whom land was thus given for cultivation had a right to enjoy it for his lifetime only. It seems that the land tenure system was not characterized by collective ownership as such; the peasants cultivated the land individually but enjoyed common use of services of the craftsmen and other rural professionals, and paid the land revenue to the state (personified in the King) through the village assembly. There appears to have been a strong sense of unity in the village communities. Persons refusing to take part in any cooperative ventures were punished by being charged with the cost of labourers and bullocks employed on that account, and deprived of the share of benefit from that work.

Important craftsmen such as goldsmiths, painters and washermen were organized into guilds* which were in fact

* Dr. R.C. Majumdar describes these guilds (Sreni) as a corporation of people belonging to the same or different caste /

local cooperatives of different occupational groups. The modes of operation of these local institutions were fairly democratic marked by processes like elections, reconciliation and discussion, debates and decision by majority vote. These local institutions were presumably free from the central autocratic control.

The respective boundaries of the social organization and administrative system were well demarcated. Nevertheless they were cooperating entities for the promotion of common weal. The King was the head of the state but not of the society. He appeared to the people like a remote object of veneration with no direct link with their daily life which was governed by the convention of social organization. The general objective of the state as represented in its administrative system* was maintenance

(Footnote contd. from p. 33)

caste but unified by the interest of same trade or profession. The guilds worked for the welfare of its members and had the right to approach the King and demand justice. - Majumdar, R.C.; Corporate Life in Ancient India, University of Calcutta, Calcutta, 1922 (2nd ed.).

* For the purpose of protection there was a Sthaniya (Thana or Police station) in the centre of every 800 villages, a Dronamukha (fort) for every 400, a Kharvatika for every 200 and a Sangrahana for every 10 villages.

For the purpose of revenue administration, there was a Gopa (accountant) for every 5 or 10 villages. The duty of the Gopa was to keep the cadastre, number plots, record landuse in every detail, dry or wet, cultivated or uncultivated. He also kept records of tax free and tax paying houses along with their family history, occupation, income and expenditure. The work of the Gopa was supervised by the Sthanika who was in charge of the Sthaniya (Police station) which was a revenue district also. Over the Gopa and the Sthanika there was Pradestr (commissioner) who was specially entrusted with the responsibility of religious taxes also (F.J. Monahan).

of law and order, punishment of the wicked, and protection of the peaceable citizens. The system of land revenue^{*} was quite flexible and non-oppressive. Provision, maintenance and improvement of infra-structure was the primary responsibility of the state. It was considered a paternalistic responsibility of the state to protect all citizens including the slaves on an equitable basis.

Petty disputes about movable and immovable property were decided by or on evidence of the neighbours. Disputes between two villages were settled by people of five or ten adjacent villages. When the communal arrangement of settling disputes failed, the state (King) intervened and took up the disputed property and redistributed it.

The village assembly made itself mainly responsible for the moral and material welfare of the people committed to its care. Since the principal source of well-being of the villagers was land, the assembly's special responsibility was the care of the land. Land which was not in private hands nor reserved as crown land or consecrated

^{*} The traditional royal share of the produce of the cultivated land was one-sixth. The crown land was cultivated by means of free hired labour or by slaves, or by persons paying one-half of the produce - the plough, the cattle, seeds and implements being provided by the superintendent of the crown-land. The water rate or irrigation charges were as follows: one-fifth of produce when water was raised by self-labour; one-fourth of produce when water was raised by lifts, or worked by bullocks, or when water was supplied by rivers, ponds or wells; one-third of produce when water was supplied by state channels. (Whether this water rate is in addition to the general royal tax is not however clear from the source consulted.)

to the temple, was held in absolute ownership by the village assembly. New increment to the village land resulting from fresh land formation was the property of the village assembly. Revenue defaulters' land also became the property of the assembly. The assembly had sweeping powers of land acquisition for public purposes, land distribution, sale or disposal. The assembly further assumed considerable responsibility in public works of utility which were deemed indispensable for the material well-being of the villagers.

All proceeds and expenses of the assembly or of the corporations were common assets and liabilities. The utilization of the joint stock was determined by the corporation itself, and the division of the net common fund among the members was of course proportioned according to the amount contributed by each individual member.

In order to enforce discipline and instil the sense of responsibility, rights and privileges, duties and obligations of all professions and cadres were unambiguously spelled out. In order to mould character and/or enforce honesty an incredibly elaborate system of espionage prevailed ensuring honest conduct from the Collector General down to the vagabond.*

* Job descriptions were so clear and punishment against failure in the performance of duty so straightforward that there was no scope of encroachment or evading responsibilities and duties. For example, a Brahman physician who treated a patient for any dangerous disease was bound to report to some authority. If he failed to do /

In the plan of the social organization there was apparently a great deal of socialism and communism representing advanced democratic ideals. But in actual composition the superstructure was oligarchic. Professor R.K. Mookerjee in his thorough scrutiny of the local government in ancient India discovered that the sabha (assembly) was the assembly of the Brahmans in which other castes had no place. In the labyrinth of political organization and social relations Professor Mookerjee has identified two types of formations co-existing, namely (i) territorial, where the principle of association was that of neighbourhood - the bond of functional physical connection promoting associated life among the inhabitants of a common geographic area; (ii) communal, where the group formation was not determined by physical co-existence, but by the moral and spiritual factor (castism). Thus Professor Mookerjee purports to establish that it was not the relationship to a physical space, but the existence of interests and functions that led to the groupings.⁸

(Footnote contd. from p. 36)

do so and the patient died, or if a patient grew worse owing to the careless treatment, the physician was liable to a fine.

Traders were allowed to make a profit of only 5% of the fixed price; if they made more profit, they were liable to a fine of 5%.

A judge or a commissioner who imposed an improper fine was subjected to a fine of twice that amount. Failure to hasten to the help of a person in danger was also punishable by law.

⁸ Mookerjee, R.K.; Local Government in Ancient India, Clarendon Press, Oxford, 1920, p. 310.

Evidently, the village was communal in plan and structure but was governed by the contrary principles of elitist oligarchy. It is clear also that although the society in general was pluralistically split on spiritual grounds, on social living it was strongly collectivistic at the micro-level. This pluralism is perhaps a characteristic feature of the Indian polity which remained perceptible throughout the entire cultural history up to date. But what is most significantly important to note during the early periods is the clear restraint of selfish individualism and aggressive proprietary attitudes at the cost of communal interest - a mental disposition which was lost during the more recent periods. Mutual respect and cooperation amongst each other prevailed not only at the level of local life but crept into the larger society, and patriotic sentiment worked as the macro element of overall societal integration.

In retrospect it becomes clear that the grass-root plebeianism found its highest expression during the Buddhist ascendancy. Buddhism preached that heightened level of consciousness where self-respect imbibes respect for other fellow beings. It was essentially a preaching of love, fellow-feeling, brotherhood and kindness - a teaching of restraint from the evils and weal towards good. But the plebeian call was soon to die at the hands of personal and dynastic aggrandisement of the Gupta kings (320-500 A.D.) when the fundamental Aryan militarism was revived in full swing. Although this

as 'Golden Age',

period is referred to by the historians/it was a very lamentable revival of social cleavage.

Bangala under the Moghuls

Social structure and economic organization of early Vanga continued more or less unaffected and unaltered till the Moghul ascendancy to political power in the 16th century. Under the Muslim rule, the Kshatriyas were dispossessed of their power and consequently the Brahmans emerged more powerful whereby the caste rigidity increased unprecedentedly in the Hindu social order.

Islam with the message of equality initially attracted and provided refuge for the vast number of lower class Hindus from their wretched existence but eventually failed to bring about any significant social development. The expanding Muslim community under the Moghul rule consisted largely of Hindu converts and as such from the very formative years the formidable influence of the Hindu heritage was being imprinted in the emerging Muslim social structure. Besides the religion of the desert people, i.e. Islam, of Arabia had to adapt itself to the requirements of an agricultural civilization in India as Professor Karim remarks:

"Popular Islam in India in many respects copied the essentials of Hindu beliefs, ideas and social institutions and adjusted them to the Islamic system in a very strange way."⁹

It is also quite conceivable that the privileges

⁹ Karim, A.K.N.; Changing Society in India and Pakistan, Oxford University Press, Karachi, 1958, p. 120.

associated with class distinction which existed in the local social order allured the early Muslim settlers such that the egalitarian tenets of Islam were compromised and the transplanted Muslim community became ardent believers in class distinction disregarding blatantly their professed belief. Parallel to Brahmanism, foreign descent formed the basis for highest claim to social distinction. Similar to the early Aryan practices, social promotion was tied up with foreign lineage - those who claimed a greater degree and purity of foreign descent began to be regarded as socially superior.¹⁰ Thus instead of creating a class-less society as ordained, the Muslims also evolved a hierarchical social order parallel to the Hindu society. The split society enlarged and now incorporated another set of splits within it. Class consciousness entered into the society on a reinforced basis.

The new sub-society of the Muslims articulated into three broad groups: the rent collecting nobility consisting mainly of Muslims of Turkish and Afghan origin; below them was a group of merchants, traders and professionals; and at the bottom were the ordinary mass vastly outnumbering the other two groups combined. In course of time the rent collecting nobility expanded so as to include all the people of foreign ancestry in addition to their own privileged group. Eventually the term 'Ashraf' (noble born) was used to distinguish this

¹⁰ Ibid., p. 120.

privileged group in contradistinction to the 'Atraf' or 'Ajlaf' meaning low born. Assuming a parallel position of the Hindu upper caste, the 'Ashrafs' abstained from soiling their hands by performing menial work or handling the plough, and looked upon the other ranks, who were mostly local converts, with contempt. The 'Ashrafs' maintained their pride and privilege by practising a sort of endogamy and refraining from inter-dining or mixing with the lower classes on equal terms. At a time, the entire 'Ashraf' class turned out to be a landed aristocracy or a feudal nobility which meant that a member of the class either possessed a hereditary holding or that in recognition of his services to the throne he had been given the rights to collect revenues for the crown. Thus social stratification petrified the Bengal Muslim society once and for all.

The Muslims also introduced new values in economic pursuits and new principles of economic organisation. Capitalistic farming and landlordism, superimposed by the state on the basis of individualistic notions of property, over-ran the communal village system. The Muslims also brought with them a tradition of trade and commerce and glorified it despising the local one. As a result agriculture as a profession and a way of life was pushed into an inferior position.*

* Professor Karim refers to the works of J. Wise who had pointed out that the learned professions such as Hakim, Hafiz, Khwandker, Macawir, Mullah and Munshi were respected by all classes. The chief reason why one trade /

The most decisive damage to socio-economic structure was done by the introduction of a new revenue system of paying the land revenue in cash replacing the old one of paying in kind. Revenue remained no longer a levy on the produce but a tax on the assessed productive capacity of land. This changed the whole pattern of social relations in production and distribution. The privilege of revenue collection was made over to a contractor who agreed to pay a predetermined sum of money annually for a prescribed period of years. The customary communal rights between the peasant and the village community started to give way to the individual relationship between the peasant and the revenue contractor. Such a rent oriented social economy gave birth to a rigid feudal social organization characterized by three distinct components: (a) the peasants; (b) the revenue collector as an intermediary between the state and the peasant producer; and (c) the state as represented by the emperor.

The new system dealt a severe blow on the peasant who now had to pay the rents regardless of the produce. Land which was so long a social asset, now became a marketable commodity. The spirit of extortion appeared on the scene

(Footnote contd. from p. 41)

trade was accounted less respectable than another was that the most honoured were followed by the Muslims themselves and their fellow-men in Upper India and therefore did not entail any disgrace, although such trades were of secondary importance from the point of view of local requirements. Local vocations were thus labelled as lowly, a legacy which still persists in the society about five hundred years later. - Karim, A.K.N., op. cit., p. 130.

and at times when the central power weakened, the revenue collectors tightened their grips, evaded responsibility of providing and maintaining services and became owners and extortionists. The class conscious society now became engrained with evils of exploitation, and the mass loathe with distrust towards authority. Internal disintegration and decay were set in motion.

In a nutshell, no significant social development took place in Bengal under the cultural and political domination by the Muslims in spite of the egalitarian promises of the creed. In fact social relations in the indigenous community deteriorated in many respects.

Bengal under the British

Having ascended to power, the British deemed it absolutely indispensable to patronize the revenue contractor group in order to buttress their own position as well as to extend their arm for revenue administration. They also reckoned it necessary to keep the split society permanently split. And towards that end they followed the policy of 'Divide and Rule'. The British gave the revenue contractors the legal title to proprietary rights. The introduction of the new system of land tenure created a new landed aristocracy - the landed proprietors named Zamindars. Subsequently a hierarchy of intermediaries developed between the Zamindar and the cultivating tenant, viz. absentee landlord, sub-infeudated tenure holders, peasant proprietors, etc.

Finally, in order to ensure a stable revenue receipt, the Permanent Settlement Act of 1793^{*} was promulgated which sealed the future of the peasants into a perpetual alley of extortion and exploitation.

The introduction of the legal code brought forward a new definition of private property. The new legal system along with the European principles of rational management gradually dispossessed the village institutions of their power and function. The village Panchayet (council) as the embodiment of local administration and management was rendered completely ineffective with the introduction of a complicated centrally hooked up bureaucracy. The social historians of Bengal are unanimous in their conclusion that the new land tenure system, unsuited as it was to the soil, accelerated the process of disintegration of the traditional village organization. Simultaneously a horizontal thrust was

^{*} The Permanent Settlement Act was a very clever device on the part of the new rulers to have themselves disengaged from the responsibilities implied for the betterment of the productive processes. The rigidity of the Permanent Settlement Act was hardened by the introduction of 'Sunset Law' which demanded the Zamindars to yield the revenue money before the sunset of a fixed date, or else they lost the contractorship. Thus the revenue yield was ensured. As a result the Zamindars, in order to save their contractorship and to make 'two-pice' themselves, compromised with their sense of responsibility and plunged into extortion. Provision of infrastructure or their maintenance became a matter of the past. True, some towns and cities were built by the British but only for the sake of speedy revenue collection and administration. Some industries were built and some improvement in communication took place but only to procure raw materials to feed the industries in England as well as for military purposes.

provided by the introduction of the capitalist method of production. Village crafts and industries failed to compete with the machine-made products. In some cases the specialized crafts were strangled to death. New methods of communication ruptured the modest set of values in the villages and exposed the mass to the allurements of the modern civilization.

Land was replaced by money as the principal form of wealth. The money economy brought about greater social differentials between urban and rural life. Among other things the emergence of new social classes is of particular significance. The rural society was marked by the appearance of traders and moneylenders,^{*} while the urban society saw the birth of commercial/industrial capitalists as well as a new working class. The impact of commercialization was felt in the growing number of merchants and traders. These merchants and traders, linked up as they became with the capitalist system, started growing not only in number but in power and influence as well, particularly because they happened to be patronized by the British as the agents of colonial expansion.

The most remarkable impact of the British rule is

^{*} True, there were moneylenders in the previous social organization, but since land was under the ownership of the entire village community, the moneylender could not evict the debtor from his soil for the non-payment of interest claims. The new moneylender became the chief instrument whereby the lower peasants were being reduced to a landless peasant labourers, share croppers or tenant peasants.

to be noted in the field of social dynamics. For the first time an element of social mobility was infused into the highly rigid structure of the traditional society. Monetary wealth now greatly weakened ancestry and birth as the sole determinant of status and position. A fluid social relations situation arose particularly among the Muslim community. With the loss of political power and finally with the end of the medieval feudalism, the nobility started losing its economic base and hence political influence. The process of waning of the Muslim nobility was further accelerated by the 'Divide and Rule' policy of the British which obviously disfavoured the Muslims. Eventually the 'Ashraf' families, powerless and weak, started marriage connections with the rising middle class which was emerging as the direct offspring of the money economy. Monetary wealth shook the basis of the thoroughly petrified Hindu society also. And with reservations, some flexibility appeared there as well but only to create new echelons in the hierarchy.

The new bourgeoisie now comprised of the Zamindars (mostly Hindu) and merchants who, with increasing capital accumulation, emerged as the leaders of the national life. A handful of very successful professionals also joined this group. Thus the reinforced bourgeoisie assumed the political leadership and started preaching nationalism against the British imperial rule. But it must be noted here that the prime motivation of the bourgeoisie was their own self-aggrandizement because under the British

reign they found themselves unable to grow as much as they wanted. The leaders did not have any genuine concern for the upliftment of the masses, for, it will be seen later, the same bourgeoisie became entrenched in the power structure after the expulsion of the British, and ever since remained a formidable stumbling block in the path of mass development.

The impact of British administration has perhaps been most thorough in Bengal where, unlike villages in other parts of India, none of the previous functionaries remained unaltered. Nevertheless, the social order at large remained non-progressive. True, the introduction of European methods of production and the social economy created scope for professional mobility, technical skill, technological improvement and capital mobility but on the social side the basic conditions of mass development remained unfulfilled. No attitudinal change took place in the minds of the people with regard to social cohesion or national integration. The contact with European culture produced 'intellectuals' who more or less aped the Europeans in clothing and fashion, culture and artifacts. The essence of European social revolution did not catch the imagination of the leaders. The society on the whole remained tradition bound reactionary.*

* This is perhaps a characteristic of the society and culture of the sub-continent as Kosambi points out that the continuity of Indian culture in its own country is perhaps its most important feature...at every stage, in almost every part of the country a great deal of super-structure survived. - Kosambi, D.D.; The Culture and Civilization of Ancient India, Routledge and Kegan Paul, London, 1965, p. 23.

The discussion on the impact of British rule would remain incomplete without taking proper note of some other developments of sociological importance which bore a belated fruit. When the British entered the arena of musical chairs for political power, the then Muslim ruling class had already evolved an established order of ideas and a way of life on the basis of tolerance, with the exception of the fanatic Aurangzeb who had sown the seed of religious separatism to germinate later. By and large both the Muslims and the Hindus, though stratified, had learnt to live peacefully at their respective social levels. But with the British ascendancy the Muslim nobility was stripped of their power and subsequently the community reverted to the convenient cloak of religion and the Muslim leaders started fanning the zeal of religious chauvinism. The naked policy of 'Divide and Rule' and the zeal of propaganda by the dethroned Muslim nobility together made an appeal to the mass in the Muslim society. Eventually the seed sown by Aurangzeb germinated and religious separation appeared on the scene. The social atmosphere was in the making and the stage was thus getting set for the propagation of the so-called Two-Nation theory which finally paved the path for the creation of two separate states: Pakistan and India.

The impact of British rule on the Hindu society was no less damaging. While the upper class was swindled to shake hands with the new rulers, the lower class was left alone where they were. Thus the cleavage between

the Hindu classes was widened by the creation of a vested interest group. Classical Hinduism transformed into a more mundane order marked by selfishness, corruption, exploitation, mistrust and disintegration.

Post-British Bengal and the Emergence of Bangladesh^{*}

In August 1947 the British, exhausted as they were after the strenuous war, hurriedly granted political independence to the sub-continent of India. Bengal was freed from the yoke of British rule but divided on the basis of the 'Two-Nation' theory advocated by M.A. Jinnah from the platform of a pseudo-nationalist party called Muslim League. The greater part of the divided Bengal was now named East Pakistan and designed to enter into a partnership for socio-economic management with another cultural group forming West Pakistan at a distance of one thousand miles. Notwithstanding geographical barriers, cultural distance and ethnic differences, the State of Pakistan was thus created signifying the free homeland of the Muslims of the sub-continent. Clearly the foundation was erroneous, based on unrealistic premises¹¹ and the purpose not readily

^{*} There have been scores of publications on the 'emergence of Bangladesh' - some political-historical, others passionately journalistic. The one which appears to have been written with a sociological bend of mind, and useful enough for reference is: Faruque, Omar M.; Concept and Eastern Printing Works, Dacca, 1972.

¹¹ Qureshi, Saleem M.M.; Pakistani Nationalism Reconsidered, Pacific Affairs, Vol. 45, No. 4, 1972-73, pp. 556-572. Qureshi asserts that religion based separatism and religion based nationality both are faulty concepts and have been disproved in the emergence of Bangladesh.

meaningful to the people. As a result the fanatic call of the two-nation separatists was not responded to by 40 million Muslims who decided to stay back in the new state of India, nor did it make any sense to the 10 million Hindus who preferred not to leave their dear motherland which was now dubbed East Pakistan. How far the partition of the sub-continent into India and Pakistan was based on the enumeration of sentiments and wishes of the common people is still an open question, but for the people of the newly formed East Pakistan the long desired freedom was yet to come. The following retrospective analysis will clarify the point.

In Bengal, the area of the largest single concentration of Muslims, the make-up of the Muslim mind has been most clearly distinguishable from that of the other Muslims of the sub-continent and for that matter from the rest of the world. Dr. Russell very rightly observes that

"in Bengal from the very earliest days of continuous Muslim impact on the sub-continent there developed a close interpretation of Islamic sentiments with what one may call the Bengali-protonationalism, and it has followed that while in the north and north-west Indian Muslim sentiment has always been markedly aristocratic in values, in Bengal it has been for centuries no less markedly plebeian."¹²

Obviously the reasons for such unparalleled development are to be sought in the unique historical, political and environmental circumstances through which Islam in Bengal evolved. Islam of the desert Arabia had to find its

¹² Russell, R.; Strands of Muslim Identity in South Asia, South Asian Review, Vol. 16, No. 1, October 1972, p. 27.

roots in the remote villages of riverine Bengal, it had to gather nourishment and strength from the plastic environment. For this reason the Muslim conquerors and religious pioneers had to seek maximum de facto independence from the central controls which was facilitated by geographical remoteness. In the land which nurtured Jainism, Buddhism and later Vaishnavism, ecclesiastical concepts were alien. The mass mind was already soaked with plebeian values. Islam gained strong foothold from the plebeian consciousness of the people. Further, in order to win the confidence of the popular sentiments, the Muslim rulers came forward to patronize the Bengali literature while their Hindu predecessors had patronized only the aristocratic Sanskrit. The unique features of nature such as the vastness of the rivers, the depth of the monsoon cloud, the torrents of rain which had shaped the Bengali faculty of contemplation and imagination, did not fail to echo out a new dimension of consciousness in the followers of the new faith - mysticism flowed in a pervasive current. The mystic abstraction found meaning in humility and mutual respect, togetherness and collective freedom. The victor and the vanquished sang in unison reflecting Bangalee proto-nationalism.

But at the close of the Moghul period the identification of the Muslim aristocracy with the Bangalee national feeling came to an ebb, largely due to the separatist policy of Aurangzeb and his vindictive attitude towards the Hindus. Further, from the days of the Permanent



Settlement the power of the Muslim aristocracy declined very sharply resulting in the estrangement of the Hindu and Muslim communities. But even in the midst of Muslim separatism the plebeian aspirations of the Bangalee Muslims came to be reflected as the background force in their political stand. As soon as the opportunity arrived the plebeian spirit, and not ecclesiastical dogma, of the Bangalee Muslims asserted itself through the medium of political behaviour (votes). It was no accident that although the Muslim League was formed in Dacca, Mr. A.K. Fazlul Huq,* a non-Muslim Leaguer, emerged as the most influential Muslim leader in Bengal who did not refer to the Muslim ideology nor to the Muslim separatism in his political manifesto. This was a testimony enough to speak for the Bangalee Muslim mind and its make-up. At once this exposed the lack of support of the Muslim League ideology in Bengal.

Under the circumstances the leaders of the Muslim League were perspiring because by hook or by crook they had to create the mass support on an all-India scale which alone would ensure acceptability of their demands. In order to create an appeal to the Muslim masses, the Muslim League leaders deemed it most instrumental to fan Muslim chauvinism. They preached that the Muslim faith and culture was far superior to that of the Hindus and

* Mr. A.K. Fazlul Huq, nicknamed the lion of Bengal, won the 1937 election by largest vote from the Muslim section and his party was called Krishak-Praja Party (Peasants' Peoples' Party) without any obvious reference to Islam.

that the Muslim way of life was in utter conflict with the practices of Hinduism, such that a separate homeland must be carved out for the Muslims of India. Paradoxically enough religious orthodoxy did not form the core of the Muslim League ideology, for Mr. Jinnah himself was anything but an orthodox Muslim. For the purpose of showing numerical strength, Muslim meant anyone who called himself a Muslim to signify one's religious denomination. In the years preceding the independence, it was this loose concept that was always hammered and emphasized by the spokesmen of the Muslim League movement for the creation of Pakistan incorporating those areas where the population of Muslim denomination were in the majority.

This in a nutshell is the background behind the creation of Pakistan. On many analytical counts it becomes clear that the creation of Pakistan was a reaction of the upper echelon in the preceding social structure and economic organization where the vested interest created the rule of exploitation and suppression.* As expected, the pioneers of the Muslim League formed the power elite of Pakistan and managed to remain in power for a long time without any election, albeit with the support of their beneficiaries. The West Pakistan dominated Muslim League government soon tasted in power an

* Saleem Qureshi points out that Muslim nationalism in India has been an elitist nationalism for the Muslim League had no programme for the upliftment of the masses. - See Qureshi, Saleem, M.M., op. cit., p. 560.

unforeseen charm where the weal of the people was made to take a back seat. Fanatic beliefs (more pretentious than real) of the Muslim League leaders now transformed into exploitative speculations. To this end some loyal servants with strong imprints of colonial administrator were patronized and many more recruited and dived in the same tradition. In short, the whole range of service people both civil and military was brought up in such a way that the colonial administrative structure and principles reappeared in toto - characterized by ruler-ruled relationship and one way communication from above.

Under the cloak of Pakistani-nationhood, the machinery of exploitative bonanza from East Pakistan set in operation - West Pakistan was to be enriched from the resources of East Pakistan. A complete domination over East Pakistan was very nakedly intended, as the 'Father of Pakistan' and the first Governor General, Mr. Jinnah, declared that Urdu (the language of minority West Pakistan) and Urdu alone shall be the state language of Pakistan - a stand which was later nullified at the cost of blood from East Pakistan. At any rate East Pakistan was getting poorer. Her basic problems of flood and cyclones and the consequent hunger and miseries remained by and large unattended. As the opium effect of religious chauvinism subsided, questions of stark reality like food and shelter started pinching deep. It started to appear more and more clear that the grave maladies of deprivation and exploitation, hunger and

poverty, death and disease that the society was suffering from were left uncured. The common people found themselves in the dead alleys of economic miseries and social degradation. After prolonged years of neglect under the British Raj the peasants were extremely hopeful about their 'emancipators', the Muslim League leaders, who, the people believed, would ameliorate their miseries. The 'emancipators' deceived. For the people of East Pakistan the superficial pledge of religion did not mean anything any more in the face of their socio-economic reality. So the East Pakistanis started getting restless to shake off the neo-colonial yoke of deprivation by their 'superior' half-brothers. And this they did at the earliest opportunity when a free election was given in 1954.

But, unfortunately, the alternative choice turned out to be no better. The United Front which was returned to power by popular vote, was formed out of the amalgamation of various parties in order to overthrow the Muslim League hegemony and as such had no unified policies for concrete action. Besides, the coalition which assumed management and leadership was politically immature. Naturally there was gross mismanagement, and subsequently fractions developed in the coalesced front. The society now started subdividing itself into innumerable groupings away from the common core of unity and social discipline.

While the country was faltering in political management, the service people, particularly the higher civil

servants, were selfishly and comfortably fishing out of the troubled water. They quietly expanded the jurisdiction of their powers and got entrenched in the cosy coach of privileges and mastery. In the absence of a stable popular, representative government, and further in the void of any social contract (a democratic constitution), the bureaucrats took advantage of the illiterate masses. Amidst deep confusion and absence of social direction, the bureaucrats turned themselves as the virtual masters of the people once and for all. Bureaucracy petrified no less rigidly than that during the imperial days.

In the meantime, having failed to exploit the religious sentiment of the people, the Muslim League leaders conjured up strategies of force and military control. The fanatically oriented army was at hand. Unfortunate for East Pakistan, complete societal pandemonium was ushered in. In politics there was mutual mud slinging, in economy there was stagnation and decline and in social-cultural life there was utter aimlessness. Such a situation created the scope for the phantom of Muslim League to reappear, this time under a military cloak. A coup followed in 1958 led by Md. Ayub Khan, then C-in-C and himself a Muslim Leaguer of a shade.*

* In a review article Elliot Tepper refers to the works of Mohammad Ayooob who has limelighted on the fact that the army was merely a front for the real 'ruling coterie' who used both the army and the political leadership to legitimize their rule. See Tepper, Elliot L.; Pakistan and the Consequences of Bangladesh, Pacific Affairs, Vol. 45, No. 4, Winter 1972-73, pp. 573-581.

De-democratization of the society and its various organs continued for four years under the military rule when the countenance of the government was changed in 1962 with a garb of presidential form of government which in reality was a continuation of the military dictatorship. Under the presidential form, the president was the head of the state as well as the chief executive. He was to be elected indirectly through an electoral college of 'Basic Democrats'. This system of so-called 'Basic Democracy', a brain child of Ayub Khan, was not an insane scheme on paper so far as mass development is concerned, but the motivation was evil: exploitation of the mass through an extended arm. With this end in view a group of pseudo-bureaucrats were created who were given some powers to exercise but not to represent popular weal. These pseudo-bureaucrats along with the official bureaucrats were made to serve the intended purpose of exploitation, dominance and control. A detailed examination of the various mechanisms of exploitation is beyond the scope of this essay. Suffice it to say here that in the new kind of federalism with extreme centralization various and sundry devices were contrived to suck the life blood of the Bangalees. Political and economic dominance was paralleled by cultural domination also. An overt attempt was made to de-Bangalise the culture of the people at the same time charging it with Pakistani elements. This over-imposition of Ayubism vis-a-vis Muslim Leagueism was destined to burst asunder. The inevitable was

witnessed by the world between 1969 and 1971. Bangladesh was born, Bangalee dream was fulfilled. But the price was too much - about two million lives, untold miseries, unbelievable harassment and immeasurable material loss.

For the first time in our millenium the management of that part of the subcontinent now called Balgladesh has fallen into the hands of its own people - Bangladesh for the Bangalees. But it must be noted with great significance that the intervening evils of colonialism, first by the British and then by the Pakistanis, has corroded the moral fibre of the community. The period under the clutches of Pakistan proved ruinous - it was a period of complete impasse, economic, social, cultural and political. The society in impasse was further shredded by the frankenstein of greed, selfishness, false vanity and intolerance released by the predecessors.

The purpose of historical review is no doubt to understand the present. But more important is that

"a people that can feel no pride in the past, in its history and literature, loses the mainstay of its national character" (Max Muller).

Through historical recapitulation the new nation has to find its own strength from within, from its truly Bangalee identity shedding all the false plumages. The rediscovered Bangalees have to correct themselves, put right all the wrongs done so far, and cleanse themselves with the purity of their very own faith and belief which is neither orthodoxly Muslim nor meticulously Hindu, but truly Bangalee.

Chapter 3

EXISTING SOCIAL STRUCTURE

The contemporary social structure of Bangladesh has emerged out of the interplay of various ethnic, cultural and political forces which worked for millennia. Ethnic strains in the population of Bangladesh are perhaps more complex and puzzling than the rest of the sub-continent. Successive waves of migrants of Mongoloid race from the east and of the Caucasoid race from the west mingling with the local Austroloids has resulted in the racial heterogeneity that characterizes the Bangalees today. Similarly in cultural composition as well, the population bears the stamp of two major creeds, i.e. Hinduism and Islam. In terms of changes in social relations, values and attitudes, British rule followed by Pakistani dominance has played a significant role.

In regard to religious denomination, 80% of the population are Muslims, 18% Hindus and 2% Christians, Buddhists and others. The Hindus and the Muslims have borrowed from each other and all the religious groups partake of local traditions and customs that are indigenous to Bangladesh. According to popular stereotype the people are non-aggressive and unwarlike, possessed of a dreamy and emotional temperament prone to mysticism, wit, music and poetry.

The Hindu community has retained its traditional caste organization quite effectively in its ranked

hierarchy of social groups based more or less on hereditary occupations. Although the basic tenets of Islam are incompatible with the concept of caste, for reasons explained earlier (Chapter 2), the professedly egalitarian Islamic social structure is transformed into a stratified order. Thus, notwithstanding the Islamic principles, the social order now basically consists of three strata - the upper, middle and the lower class. The system has the basic characteristics of class though not institutionalized, and at times exhibits caste-like tendencies. Relative prestige and power is derived from the differing degrees of wealth and associated political status and to a lesser extent from the level of educational attainment and family background. With the abolition of rent-receiving intermediaries (Zamindars) in 1951, the landed aristocracy has lost their prominence. The upper class is now dominated by a handful of industrialists, business men, top civil servants and a few very successful lawyers - some of whom have risen from middle-class and lower-class origins and inter-married with the members of the old, noble families or within the other groups of the upper class. The national middle class is composed of the less successful lawyers, teachers, other professional persons, the majority of the civil servants, salary earners in business and industry, prosperous traders, independent farmers and career politicians. The lower class is made up of the vast numbers of landless or nearly landless peasants, fishermen, artisans, labourers

and wage earners, peddlers and hawkers and the lowest ranking civil servants, i.e. the peons, etc.

The small upper class formed mainly in the cities play a leading political role directly or indirectly. Social and political mobility starts with movement to the cities, the actual arena of politics. Many lawyers, teachers and other professionals are politically active but not quite influential. The lower class is politically uninformed and ineffective except the urban proletariat who are becoming increasingly articulate and volatile.

Land is no longer the sole source of wealth. Many tradesmen have become prosperous through commerce in the rural areas, and subsequently now exercise new influence in the village affairs. Very large landowning elements are conspicuously absent and the clear-cut division into a powerful landowning elite distinguished from a clearly subservient group of peasants, artisans and menials has now blurred considerably.

The key to mobility lies in the access to the basic means of production, i.e. land or the equivalent monetary wealth; and a considerable surplus derived from those. The surplus gives a person and his family access to education and higher social status and, most important of all, political connections. With political connection hook-up with the bureaucracy follows almost automatically and thus mobility is facilitated.

The traditional village in which a system of

inherited occupations and cooperative labour made for a high degree of self-sufficiency and a group of elders exercised extensive authority over the entire community no longer exists in the traditional form. The traditional qualifications of ancestry and age no longer perform the sole role in determining the local leadership. At present a combination of education, wealth, political connection, personal dynamism and perhaps age determine the emergence of Sardars/matbars (the village leaders). The matbar together with the village teacher and the Imam^{*} (the leader in congregational prayers) form the leading elite in the villages - people listen to them and in general accept their advice. Pilot studies reveal that those leaders are respected and as such they constitute a force and very often a barrier in the matters of social and economic change. In matters perhaps other than agriculture and particularly in religion and matters which confront religion such as family planning and the use of contraceptives, out-door work for women, etc., the Imam is a strong force of resistance.¹

^{*} Ingvar Oja, a Swedish journalist, observes that "before independence the Moulavi (Imam) had considerable political influence as a spokesman for the Muslim League party, but since that party has been banned by the ruling Awami League, his influence in politics has waned. Power has shifted to the representatives of^{Awami} League who use both threats and relief supplies as political leverage. - Oja, Ingvar; Struggle for Survival in a Village of Filth, Poverty and Hopelessness, The Times, March 26, 1973, p. viii.

¹ Zaidi, S.M.H.; The Village Culture in Transition - a study of East Pakistan Rural Society, East-West Center Press, Honolulu, 1970. - The two villages surveyed by Dr. Zaidi are claimed to be typical of the country in terms of attitudes, beliefs, general adjustments, etc.

Social Relations

Despite remote and recent colonization, World Wars, and the 'cultural bombardment' as well as the expansion of centralized administration, the village community has retained some cohesiveness at least in inter-group relations and remains by and large the basic structural unit of society. Although strong value is attached to village solidarity, the grim challenges of survival out of scarce resources render the villages/split with factional disputes, most of which originate in quarrels over the inheritance/use/possession of land or a passage road or domestic animal or water bodies. In case of external threat, however, the villagers form a unified front.

In communal relations there is in fact a greater community of interest between the Muslims and the Hindus than might be expected.² The division between the two appears to be non-existent specially in the realm of economic activities. There is a great deal of mutual interdependence in specialized trade and professional skills.

So far^{as} the inter-group relations are concerned, differences in social status are considered important and as such the concept is stressed and expressed in social behaviour. Throughout the society younger persons submit formally to their elders and subordinate

² Ling, Trevor; Creating a New State: the Bengalis of Bangladesh, South Asian Review, Vol. 5, No. 3, April, 1972, p. 227.

themselves to their superiors. Importance is attached to showing of formal respect by persons of lower rank to those occupying a higher station in life.* A person in higher rank in turn generally appreciates the expression of respect from those below him. Members of the upper class are expected to glorify their position by maintaining a very high standard of living with a band of servants, etc. They are further expected to offer generous hospitality and charity - failure to do so would bring them scorn and ridicule from the public. Their spirit of thrift and prudence would hardly be appreciated. Quite often the unscrupulous rich, specially in the villages, would master strength and support and win election votes by dispensing hospitality.

Most commonly the authoritarian figures derive their power from their superior economic resources, less commonly by a superior heritage; but a combination of the two proves most advantageous in that it gives them the necessary strength to act effectively both within their own levels and below. A person in such a position enjoys the flexibility and scope to cultivate and maintain

* It is interesting to note that when a person's station in life is not readily identifiable, his countenance and general physical make-up including clothing, play a great role in demanding respect. A person in humble clothing and with austroloid features will command much less respect than a man with caucasoid features and good clothing. The former will perhaps be identified as one from low stock and of poor means and the latter as one of noble stock and higher means. This perhaps is the stereotype which was projected by the Aryans and subsequently nurtured for centuries by the reactionary elements.

connections with influential persons outside the community such that the people of his own locality depend on him and seek protection of their basic interests. Thus power tends to freeze in the hands of the paternalistic figures whom others believe have the capacity to protect them.

On the reverse, persons in a subservient position within the authoritarian structure tend to develop very little sense of initiative or responsibility. They remain askance, dependent and politically inactive. The authoritarian figures take advantage of this and act as a middle-man between the government machinery and the mass. It may be mentioned here in ~~the~~ passing that the so-called popular elections held in 1959 and 1964 under the false promises of 'Basic Democracy' simply allowed this authoritarian structure to crystallise. The elections merely institutionalized the leadership of certain individuals, generally the wealthy and otherwise influential persons who previously had exercised power in some other form of institutional arrangements.

The authoritarian social structure and the concomitant social relations are in fact the ramifications of the family structure and the whole process of socialization and family relations. A sense of loyalty is inculcated from the very childhood along with a spirit of obligation to the whole aggregate of kinsmen, near and distant, who are regarded as members of the larger family. Indoctrination from the early years is to obey and respect elders and discharge responsibility for the

welfare of the family group. In varying degrees a feeling of identification with the village and the local community is also infused.

Obedience is valued as opposed to individual freedom of action. The notion of obedience operates at various levels - obedience by a child to his parents, by a younger brother to his elder brother, by a wife to her husband, by a pupil to his teacher, by a servant to his employer, by a tenant to his landlord. Parents are expected to be strict disciplinarians - an ideal parent is the one who does not allow his child to become unruly, boisterous or even restless. An adorable wife is the one who acknowledges the supremacy of her husband in all matters. The most common means of controlling the behaviour of children is physical punishment. As for the adults, the method of social ostracism is quite effectively used.

The training in family unity and loyalty has a lasting effect in later life when an individual enters the larger arena of social relations, be it in business, service or politics. As a grown-up individual, a person is always expected to help his kinsmen according to his capacity. Although in the urban culture family solidarity, cooperation and joint action are emphasized less these days, no individual could openly ignore family bonds without incurring severe disapproval from his own social level. In career selection, more particularly in marriage, family suggestions and recommendations are unavoidable. Thus from birth to death the dynamics of

family relations provides the basis for collective security, collective honour and collective freedom.

Strange as it may appear, the sense of collective freedom and honour at the family scale is hardly amplified at any higher level. The inter-class and inter-group relationship at the macro level is characterized by near-absence of fellow-feeling, cooperation or sense of unity.* The society at large is torn with inter-group dissension on economic, professional or political lines.

However, a covert system of sinecure distribution in jobs, contracts, permits and licences keeps the intra-group relations alive and expanding, though without any real foundation of collective consciousness. On vertical lines this system of 'gravy' distribution works towards the formation of a patronage network which in turn works with reactionary zeal to protect the system. The greatest politico-sociological significance of this system lies in the relationship between the lowest order on the one hand and all other upper echelons taken together on the other. Since the receiving end is too big and the gap in between very distinct, the distribution here is much more subtle and diffused which takes

* There is no doubt that a great deal of nationalistic feeling kept the vast majority of Bangalees united during the days of struggle. This sense of nationalism, though being incubated for quite some time, precipitated from the brutality of the Pakistani army. Whether this nationalism has been deep and pervasive enough for nation building purposes is an open question. Reportedly, selfish motivation and greed, personal aggrandisement and spirit of accumulation is greater than ever.

various forms such as charities (both personal and institutional), gifts and even alms and good-will feasts. Above all a personal relationship between members of these two exclusive categories which is often based on a queer mixture of love and pity from the upper end and veneration-expectation at the lower. Hence any act of charity or gift from above is considered by the receiving end as a gracious favour which must be paid back by due gratitude. Thus the system almost imperceptibly perpetuates 'status quo' and subsequently chances for the emergence of inter-group collective consciousness or mass emancipation from the lower end is held at bay.

Political Dynamics

The liberation movement of Bangladesh from the date of its precipitation onwards was carried out, for circumstantial reasons, in the name of Awami League, a party which had swept the polls in 1970, the last election under the union with Pakistan. When the war of genocide was unleashed on the soils of Bangladesh, the leaders of Awami League fled across the border to India and formed a government in exile in order to arrange a diplomatic war. This movement was reinforced by the defection of Bangalees in the army, border militia, police, workers, students, intellectuals, bureaucrats and other professionals who also fled in response to the military atrocities. Although the insurgence was clandestine, two branches of leadership were identifiable: political and military.

Apparently the banner of political leadership was held by the leaders of Awami League but the activists came from other walks of life also, such as the Bangalee officials in the Foreign Service of Pakistan, Bangalee intellectuals and students abroad. The leadership of the military encounter, however, was in the hands of the various factions of the Mukti-Bahini (Freedom Fighters).

According to Dr. Jahan's account, the Awami League provided the liberation movement only with front leadership.³ Yet following the liberation, the Awami League formed a single-party government ignoring the pleas of other parties to form a national coalition.* Since then the Awami League, as the creator of Bangladesh, has tended to monopolise the political scene of the country to the exclusion of any other party. For obvious reasons it is necessary to examine the origin, composition and outlook of the ruling party.

The Awami League was formed in Lahore, Pakistan, in 1950 when it was named Awami Muslim League. But from the very early days the party was gathering strength predominantly from then East Pakistan by championing the cause of regional autonomy. In order to register an

³ Jahan, R.; Bangladesh in 1972: - Nation Building in a New State, Asian Survey, Vol. XIII, No. 2, February 1973.

* It is relevant to point out here that the 'Six-point programme' on which the Awami League fought and won the election of 1970 do not at all constitute the founding charter of the new nation, for those were issues listed essentially as a protest by a political unit against the hypocritically insensitive central government. The Six-point had no suggestion of a liberation movement implicit or explicit.

egalitarian concern to which the popular mind is very sensitive, the party dropped the adjunct 'Muslim' from its name in 1953. In 1954 the party successfully brought about an electoral alliance of several other parties against the hegemony of the then ruling Muslim League party; and subsequently formed coalition cabinet sharing power with the allied parties both in the central and the provincial governments. Although the party's apparent commitment was plebeian, once in power it showed no effort of any significant departure from the policies which it had attacked severely while in opposition. At this, the then president of the party, Moulana A.K. Bhashani, left the party and formed another with more proletarian promises.

A period of relative inaction on the part of the party followed as a result of military rule in the country from 1958. When political activities were allowed again, the Awami League appeared in the political scene under the leadership of Sheikh Mujibur Rahman. In early 1966 the party launched its movement for full 'autonomy', but this time in essence it was a movement of then East Pakistani bourgeoisie and upper middle-class including a section of the senior civil servants who found their advancement held in check by their counterparts in West Pakistan.* By this time the impact of

* On the basis of a very exhaustive analysis Dr. Maniruzzaman Talukdar concludes that "the 'Six Point Revolution' was in essence the revolution of the petty bourgeoisie of East Bengal who found their road to advancement /

systematic exploitation by West Pakistan started biting deep in the minds of the mass, and the Awami League started gaining phenomenal success in mobilizing the masses. As the movement gathered momentum another slogan joined along, that of Krishak-Sramik Raj (rule of peasants and workers). Naturally apprehensive of losing the increasing popularity, the party promptly added a programme of radical economic reform, thus ensuring mass support. On the other hand, the businessmen and industrialists, like the national bourgeoisie in most former colonial countries, continued to back up the autonomy movement launched by the party and concomitantly financed its election campaign. Thus the Awami League secured a landslide victory in the election of 1970 in spite of the fact that it did not have any peasant organization.

Evidently the Awami League is not a party of the masses in the true sense. It is an urban-based party run at the initial interest and support of the urban

(Footnote contd. from p. 70)

advancement blocked by their counterparts in West Pakistan that were patronized by the military based dictatorship of General Ayub Khan. At this point their manifesto did not contain many of their essential promise "the 42-point" manifesto which was issued shortly after its formation and which included such points as abolition of all rent-receiving interests in land without any compensation and the distribution of the surplus land among the landless cultivators. - Talukdar, M.; Radical Politics and the Emergence of Bangladesh in Brass, P.R. and Franda, M.F. (eds.), Radical Politics in South Africa, MIT Press, Cambridge, Mass., 1973, p. 224.

bourgeoisie.* The party's mass concern is not deep rooted nor genuine although it has rolled into the status of a national party. It is quite noticeable that the members of the party have a very shallow commitment to the national purpose, and the spirit of dedication and sacrifice that are now demanded for the nation building are consistently lacking. The average citizen is following suit quite unimaginatively.

Power structure in the village remained unaltered. The guerilla fighting of 1971 was neither intensive nor prolonged enough to produce any radical shift in the reactionary power structure of the village. The reactionary framework will conceivably prevail for some time as Dr. Rownaq Jahan reckons that since Awami League as the party in power has access to vast amounts of patronage and resources,

"it can be expected not only to hold on to its original bourgeoisie support base but also expand it further."⁴

In the meantime the party found it quite convenient to use the unquestionable charisma of its leader, Sheikh Mujibur Rahman, in order to gain credibility and mass

* Dr. Rashiduzzaman's observation may quite appropriately be quoted here that 'while the first Bangladesh Cabinet was entirely dominated by lawyers, the Awami League elite movement operating in exile or underground consisted mostly of lawyers (27%) and businessmen (25%). Most of the intellectual leaders of the movement were only sympathizers.' - Rashiduzzaman, M.; Leadership, Organization, Strategies and Tactics of the Bangladesh Movement, Asian Survey, Vol. XII, No. 3, March 1972, p. 189.

⁴ Jahan, R., op. cit., p. 20.

support. In the name of professing Sheikh Mujib's ideology, the highly motivated members of the party started protecting their own vested interests. The motivation did not go unnoticed for long - the student followers of Awami League split into two factions - one supporting 'Mujibism'* and the other emphasizing 'scientific socialism'.

The real malady lies even deeper at the fundamentals of Bangalee nationhood. While Bangalee separatism was incubating, the indigenous conceptual foundation of an independent Bangalee nationhood was not evolving properly due to the Pakistani frame of reference as well as the confusion and social aimlessness mentioned earlier. The ideology which was declared after liberation is not a popular consensus resulting from a natural process. It was phrased in haste under the 'ideological umbrella' of the Indian Government. While Bangladesh has a historical basis for a separate viable identity and while the Bangalees have had the scope of expressing their own nature and aspirations, the officially stated ideology appears to be a shadow of Indian contemporary Congressism.

However, the stark reality of the situation now prevailing in Bangladesh is tending to defeat empty sloganism. The non-availability of food and other

* The term Mujib-bad (bad = ism) was first coined by the Awami League's student league and came into prominence in 1972 when the students' league was split in two factions. Mujibism stands for the four principles of Nationalism, Democracy, Socialism and Secularism, and is proclaimed to correct the deficiencies of capitalism and Communism.

essentials, the ever-rising price inflation, wage control without price control, unequal sharing of austerity, corruption and nepotism at all levels, self-assertion by the unscrupulous members of the Awami League and, above all, Mujib encircled by supplicant opportunists and hypocrites have started breeding disillusionment.* The increasing array of political parties bears testimony to the people's new search for salvation.

At present there is yet to appear a consolidated opposition party. Vocal criticism of the government is reportedly confined to only two weeklies: the Holiday and the Wave, which are read only by a microscopic urban elite and some students in contradistinction to the mass of the illiterate rural population. In their tone the weeklies are anti-Russian and hence anti-India, and perhaps can be labelled loosely as pro-Peking. But obviously their influence is limited.

The National Awami Party (pro-Moscow) of Professor Muzaffar Ahmed, under the Russian umbrella was beginning to gain some support significantly among the Awami League student group. But a violent anti-American demonstration accompanied by anti-Mujib slogans by the party on the

* In January 1973 Antony Mascanenhas reported about the growing impatience of the people with the progress of the country. See the Sunday Times article 'Famine or Boom for Bangladesh?' by Antony Mascanenhas, January 14, 1973. Eighteen months later Walter Schwarz, referring to the 'widely enthusiastic' welcome and an 'astonishing demonstration' in favour of Pakistani's President Bhutto, describes the situation as a 'grim commentary on the disillusionment and hardships of freedom'. See the Guardian, 'Dacca Hails Bhutto Return' by Walter Schwarz, June 28, 1974.

New Year of 1973 provoked an equally violent counter-demonstration by the more fanatical section of the Awami League resulting in several deaths, shattered the progress of Professor Ahmad's party, and not much has been heard of the party since then.

So far,⁵ the leftist parties in general are concerned, they are still apparently diseased by doctrinal subdivision and tactical disunity. Although the leftist parties had created an initial atmosphere of socialist and secular nationalist appeal, and although they have had some rural-based organization, it is due to this factionalism that the leadership of Bangalee nationalist movement passed on to the hands of the Awami League so pre-emptively.⁵

The real and/or potential challenge comes from the vast number of youths who have been radicalized by the liberation movement without any precise party-commitment or ideological bondage. The only visible political vehicle for those ex-guerillas and students who feel that their contribution to the liberation struggle has not been rewarded by a due participatory share in the nation building programmes is the National Socialist Party of Abdur Rab and ex-Major Jalil - a party which emphasizes scientific socialism and itself a break-away section of the progressive elements of the Awami League party.

All told, it must be acknowledged with due sincerity that Awami League is the only party with some political

⁵ Cf. Talukdar, M., op. cit., p. 225.

experience. Provided the ethical commitment and moral correction, Awami League still has the scope of emerging by and large as the national party and all because of one person - Sheikh Mujib himself, the man who had gained the unconditional faith and respect of a vast majority of 75 million people. Sheikh Mujib's unique rapport with the Bangalee masses puts him in a very advantageous position to transform his party into a party of masses - a party that would mobilize the dispossessed so that they would acquire the self-confidence to assert their rights and participate in the process of nation building. But alas time and opportunity are passing by!

Bureaucracy

Bangladesh has unavoidably inherited one of the most remarkable civil service systems in the Third World. The top civil servants are the members of the erstwhile 'CSP Clan',* who happen to be highly conscious of their elite status in government and society. Though the group usually represent the best educated, most sophisticated (as against rustic) and more cosmopolitan segments of the population, they have the tradition of subjecting

* CSP stands for the Civil Service of Pakistan which is the top branch in the Central Superior Services of Pakistan which include Foreign Service, Police Service, Finance and Revenue Services, Postal Services, etc., etc. The structure of the system was installed in India by the British, during the 19th century. After the creation of Pakistan a small number of British-trained civil servants took over all important administrative and political offices and since then the group has expanded to maintain the 'silver frame'.

themselves to public criticism for being arrogant, snobbish and aloof from the common people and for acting like rulers. It has been discussed in the previous chapter how and under what circumstances many of the senior civil servants found access to considerable political power. Their enjoyment of power eventually led many to disgraceful compromises with corrupt politicians and immoral businessmen.

The legacy of bureaucratic control entangling the entire political process is proving to be inextricable. This problem has a functional basis also - most of the crucial political decisions and legislative actions originate in the executive branch of the government. Thus the top civil servants find for themselves an indispensable role to play in the development of public policy. Naturally the civil servants reckon it more important to have alliance with the politicians and members of the parliaments than cooperating with the planners and the related technocrats. Besides, their bureaucratic bigotry compels them to remain above the technocrats and maintain one-way dictation from there. They most flagrantly reject the idea of being told what to do. Kevin Rafferty reports of such a disastrous battle between the planners and the regular bureaucrats:

"Several top members of the Bangladesh Planning Commission are understood to be anxious to resign because they feel that the hostilities and delays of the bureaucrats are hindering their attempts to mend the economy of one of the world's poorest countries. The battle...could hardly

have come at a worse time."⁶

On the social plane the bureaucrats are nothing but a new type of bourgeoisie whose members support each other and together they form a closed sub-society; and thereby contribute to social cleavage. What is more damaging is that the administrative bourgeoisie, instead of setting the ideals of prudence and savings, set the examples of prodigality and a "civilized way of life". Having access to easy loans from the commercial banks and public treasury, they can easily buy cars and other imported luxuries; and thus commit themselves to "living beyond their means". The life-style of the top bureaucrats is the 'source of inspiration' for the technocrats, professionals, other higher salary earners, and the same poses as an 'eldorado' for most of the young passing out university graduates. Thus suicidal value orientation follows in career selection and in sense of purpose in living. The spirit of service to the people and nation has thus come to be sacrificed at the altar of personal comfort and self-glorification.

Values and Attitudes

Studies of group or individual attitudes and reactions have not yet been carried out with due earnestness and systematic approach. Value oriented views expressed by political, religious or literary leaders

⁶ The Financial Times: 'Planners versus Bureaucrats', London, Sept. 7, 1973.

are neither representative nor conclusive. Under the circumstances observational experiences seem to be the only basis of some theorization in spite of the danger of making sweeping generalizations.

People in both the Muslim and the Hindu community regard the expression of a fervent attachment to religion as an essential value in life. In order to maintain the image of a man of high moral character, emphasis is placed more on the conspicuous display of loyalty to the symbols and rituals of religion rather than on its underlying spirit. Public assertion of faith appears to be more important than piety. A rigorous ritualist is esteemed to be more pious than a conscientious practitioner in social ethics. Mechanical adherence to religious injunctions (often mis-elucidated) characterizes all believers. Nevertheless, the imaginative mood, characteristic of Bangalees, is not closed to logically convincing reasoning and that reasoning, so far as religion is concerned, must come from authority. Unfortunately, the religious authority lies in the hands of people who have no rational education other than theology - their reactionary minds stay far away from adapting religion to the challenges of survival. Thus, instead of reforms in order to meet the demands of crisis situation, crisis is made acceptable as pre-ordained and failure is explained in terms of fate. This fatalism stands as a major stumbling block in the way of positive action, collective or individual.

As hinted earlier the society is soaked with meaningless elitist values transplanted from without. Although the British have left us long ago, the jackets, suits and ties are very much with us. As a symbol of elitist sophistication, officers, young and old, public or private, keep suits and ties on even when the climate is extremely uncompromising. A stay abroad for either so-called training or education is a mark of elitization, a passport to enter the ring of elites in the urban centres. School and a college certificate represents above all a ladder to climb up into the elite careers, i.e. sitting behind a desk with clean hands and clean shirts, earning more, and prestigiously, working less. In such a framework, a young man leaving college is contemptuous of his contemporary still ploughing the ground. The contents of education, detached as they are from the challenges of reality, develop an antipathy towards manual labour, rural way of life and occupation. While the need of the country is more and more field workers in rural development, the rush is towards administrative services or generally office jobs in the cities. The phenomenon is the manifestation of transplanted values at once collective and individual. The sense of collective pride and collective freedom compels an individual to try to extricate his family group from the rusticity of rural life^{*} and enlist in the elite as

^{*} The profession of agriculture is so despised that the Bangla word for peasant, chasha (he who tills the land) has /

soon as possible. Therefore neither the individual himself nor his family would like a life revolving around manual labour and rural environment, even though the individual may be a graduate in agricultural sciences or rural community development.

However, the struggle for Bangladesh and the experience of senseless brutalities carried out by the Muslim half-brothers (!) has brought about a linguistic nationalism and a transition towards secularism perhaps supplanting Islamic nationalism.⁷ In fact it is conceivable that a greater community of interests prevails between the Hindus and the Muslims than might be conjectured. The sharper lines of cleavage, as recent events have demonstrated, are more between Balgalee and non-Balgalee than along religious communal lines.

More healthy manifestations of the recent upheaval are that the social stigma that was previously attached to nursing, midwifery and career-womenhood in general appears to have given way to a degree of acceptance particularly due to the scarcity of such services.⁸

All told, it must be confessed finally with all

(Footnote contd. from p. 80)

has come to mean rustic, uncouth, unpolished, mean, etc., and it is always used in a very derogatory sense. This ironical cultural phenomenon has been upheld by Kusum Nair in her study of the other fraction of Bangla culture in West Bengal, India. See Nair, K.; *Blossoms in the Dust*, Gerald Duckworth & Co. Ltd., London, Chaps. XIX and XX.

⁷ Talukdar, M., op. cit., p. 224.

⁸ Oja, Ingver, op. cit.

humility and indignation that the part of the world now known as Bangladesh was much more amenable to egalitarian ideas in the remote past than recently or at present. Buddhism with its clarion call of magnanimity got most of its followers from the inhabitants of this soil, who were despised by the Aryans earlier on. And it was from the same place at a later period that Islam with its message of equality got its adherents. But Islam betrayed, Pakistan cheated and now the society is made up of individuals who, varying in abilities, aspirations and achievements, are by no means equal before each other.

Chapter 4

THE PRESENT ECONOMIC STRUCTURE

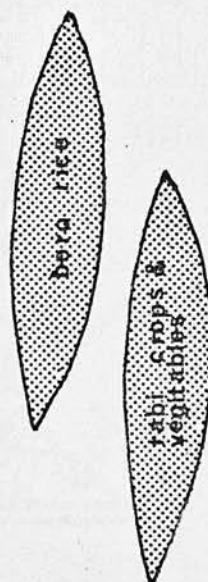
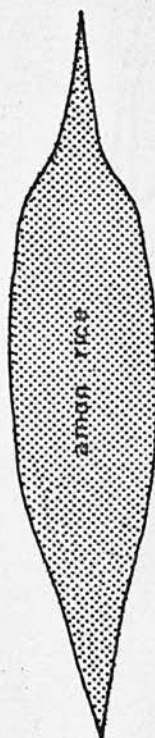
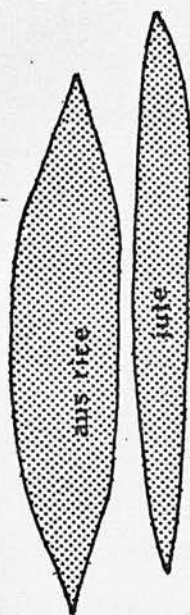
The present economic structure of Bangladesh and the spectrum of economic activities therein must be seen in the context of geo-physical and climatic endowments as well as the politics of resource utilization. Land and water are the only basic resources from which the country has derived its sustenance. The interplay of relief features and rivers, rainfall and climate have moulded the country predominantly agrarian in her economy. To start with, Bangladesh has a meagre 22.5 million acres of cultivated land. With a cropping ratio of 1.38 the total cropped area comes to about 31 million acres (see Table 4.1).

Information available up to 1970 clearly shows that the economy of Bangladesh is predominantly agrarian with more than 55% of her Gross Domestic Product coming from agriculture (see Table 4.3). The deltaic plain of annual deposits of alluvium has rendered the country a land of rice growers and rice eaters; and as such the entire agricultural production is largely dominated by the production of rice - 82% of the total production of major crops is accounted for by rice alone occupying 75% of the cultivated land. As a matter of fact the production of rice determines not only the performance of the agricultural sector but the entire economy as a whole just because of its weight as a single component.

Rice is extensively cultivated in every district on

individual farm basis and most of the peasants produce rice for their family consumption. Three different varieties of rice are grown in the course of a year and the major harvest depends mainly on rainfall and a minimum of inundation. The most important variety is called Amon representing about 58% of the total area sown with rice and accounting for about 60% of annual rice harvest (Table 4.4). Though the crop is grown more or less all over the country, it grows better in the inundated areas of Dacca, Faridpur, Bakergauj, Khulna and Comilla (Fig. 4.2). The crop is sown during August-September and harvested in November-December (see cropping calendar). Since the sowing time coincides with the onset of monsoon rains and the subsequent inundation, the crop is rendered vulnerable to excessive floods particularly during the growing period. The second important variety is called Aus representing about 33% of the area under rice and accounting for about 25% of the total harvest. This variety grows well on moist but relatively higher lands. The crop is sown in April-May and as such is dependent on the timing of the 'little rains', and harvested during August when the threat of excessive floods looms large. Over the past decade Aus crop has proved to be most unpromising in terms of yield per acre (Table 4.4); besides, the crop produces an inferior type of rice that does not keep well. Yet the crucial importance of the crop lies in the fact that it helps the country to tide over the most critical months of food

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY
Rainfall	0.5"	0.9"	2.7"	6.4"	12.0"	19.0"	15.5"	15.6"	13.0"	5.9"	0.8"	0.2"	0.5"	0.9"	2.7"	6.4"	12.0"
Temp. (F°)																	
max	54	57	65	72	74	77	78	77	76	74	62	56	54	57	65	72	74
min	77	80	88	91	89	88	88	88	86	87	83	78	77	80	88	91	89



Note : Plants can be grown round the year provided there is adequate water. Amon season is longer because it is sown early so that the paddy will be growing strongly and tall enough by the time floods come. With water control, the season can be shortened,

Fig 4.1 Cropping Calender

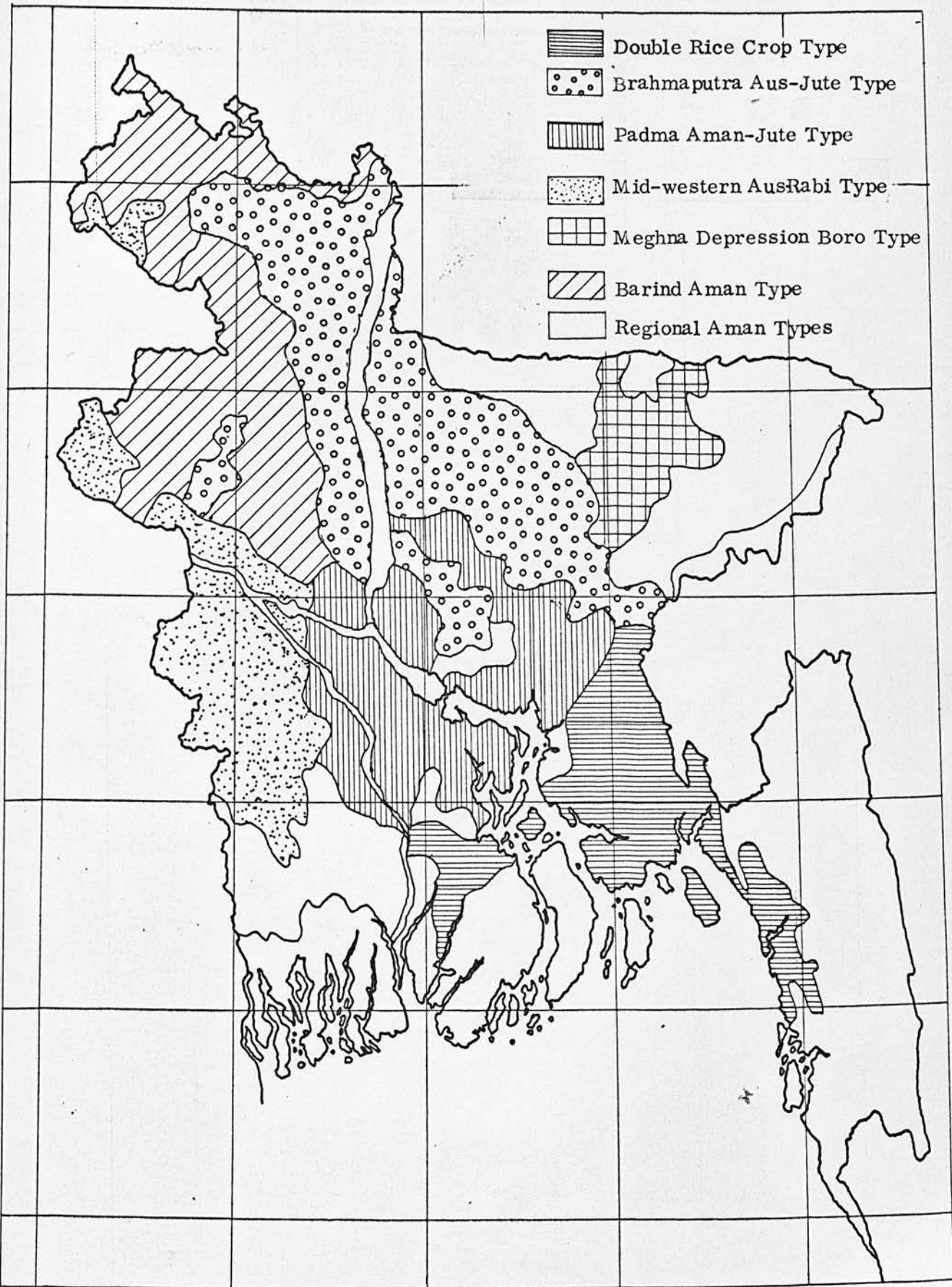


Fig. 4.2 Major Crop Regions
(After Johnson, B.L.C.; South Asia, London 1969)

shortage. The third variety is called Boro which occupies only about 9% of the area under rice but contributes more than 15% to the harvest. It is a hardy crop and thrives well on marshy areas and depressed river courses. The crop is sown in December-January and harvested in March-April. In terms of yield per acre the crop has proved to be far superior to the other two varieties, yet it could not be cultivated on an expanded scale because its growing period coincides with the driest months in Bangladesh. Any large scale cultivation of this crop is dependent on dispersed irrigation.

Clearly, the spatial and temporal distribution of the most basic economic activity is conditioned by the physiographic limitations, soil characteristics and climatic endowments. Not surprisingly, yield per acre is one of the lowest in the world and, more crucial, there is hardly any room for geographical expansion of agricultural production. As a result, production of the largest single sector of the GDP is still hovering below the subsistence line.*

The most important non-food crop is jute which has great significance in the economic life of the peasant as well as of the nation for it determines the non-subsistence consumption of the peasants as well as the volume of external trade of the country. Jute is a rainy season

* In the recent years total rice production amounted to 11 to 11.5 million tons leaving a deficit of about 2 million tons (to expand as the years go by). This issue will be examined closely in Chapter 9.

crop and moist heat is most favourable for its growth. Light silt-renewed soil is ideal for jute crop. Hence the main jute belt seems to follow the zone of inundation where fresh loam silts are deposited every year. Obviously, the distribution of jute crop is also strictly preconditioned by geo-physical endowments and it has to compete with rice crop which is still unable to meet the subsistence requirements. Vying with rice, jute receives only 5% - 8% of the cultivated land and thus constitutes a small portion of the GDP. Yet jute is the largest foreign exchange earner of the country - 60% - 70% of the produce is exported and the rest is consumed by the national industries. As a matter of fact, jute (raw and processed) contribute to about 90% of the foreign exchange earnings of Bangladesh (Table 4.5). It is worth mentioning here that the country produced about 80% of the world's total jute in 1948 but in 1962 the share dwindled to 46% when India produced 41% and the rest of the world 13%. The decline in the quantum of jute export was due to a number of reasons: (i) effective taxation on producers concealed in the form of an unfavourable rate of exchange and export tax;¹ (ii) stagnant production resulting from diminishing yield of land subjected to vagaries of nature; and finally (iii) the vicissitude of world market prices giving rise to unstable incentives to production - when the incentives were too high, jute was

¹ For a detailed discussion of this point see Khan, A.R., The Economy of Bangladesh, Macmillan Press, London, 1972, pp. 28, 29 and 46.

observed to have been cultivated even at the cost of rice causing rice shortage to accentuate. Thus, unstable prices, unstable supply and discriminating commercial, industrial and exchange rate policy of the Pakistan Government all together contributed towards losing the world market. Nevertheless Bangladesh is still the producer of the world's finest quality jute and in terms of yield per acre the country is better off than the next biggest producer, India.

In addition to these major crops, i.e. rice and jute, there are a number of minor crops contributing towards the total of agricultural products. Of these, pulses (lentils, etc.), sugar cane, oil seeds, vegetables and tobacco are worth mentioning from the point of view of domestic (subsistence) needs as well as cash potentials.

Pulses are very basic in Bangalee diet. A meal is never complete without pulses* and as such different varieties of pulses are grown all over the country. Pulses are winter crops and hence are dependent on irrigation or otherwise moist soils. Although in terms of volume or value added the contribution of pulses to the total agricultural GDP is very small, the importance of the crops is extremely crucial in meeting the subsistence needs. It is perhaps through the help of pulses that the Bangalees have so long been able to postpone large scale death from malnutrition. Yet, in the struggle for

* Rice with lentils is so common as a minimum meal that the expression 'Dal-Bhat (meaning rice and pulses) is synonymous with any humble meal.

basic cereals, the importance of pulses is being overshadowed. In 1954-55 the total area under different kinds of pulses amounted to 1,115,000 acres yielding 351,000 tons of produce; in 1966-67 the acreage dwindled to about 877,000 acres producing 260,000 tons of pulses. During the last years of association with Pakistan import of pulses from there was consistently increasing.*

The next minor crop of crucial importance is oil seed. Although the produce is far short of being exportable surplus, it is a raw material for the local manufacturing industries in so far as the seeds need to be crushed and oil extracted therefrom. Over the recent years sacrifices, like other minor crops, had to be made in oil seed production also. Area under the different kinds of oil seeds reduced from 631,000 acres in 1950-51 to 610,000 acres in 1966-67 calling for more and more import of oil seeds from West Pakistan.*

Although sugar cane is a very minor crop in terms of the area it occupies, it is an important cash crop for the peasants and an industrial crop for the sugar industries both indigenous and modern. Climate and rainfall in Bangladesh has made it a natural home for sugar cane. It is perhaps one of the few regions in the world where sugar cane grows in the wild form, and hence indigenous varieties are still being used for producing sugar.

* Import of oil seed went up from 85.4 million Rupees in 1960-61 to 108.8 million Rupees in 1968-69. Similarly import of Grains rose from 6.6 million Rupees to 15.8 million Rupees during the same period. Source: Economic Survey of East Pakistan 1969-70.

Usually sugar cane cultivation is favoured in the northern part of the country where jute is not a prominent cash crop and where large single crop areas are prevalent. The domestic demand is so high and cash incentives are so attractive that even in the jute belt considerable areas are now devoted to this crop. Sugar cane acreage has risen from 226,000 acres in 1950-51 to about 413,000 acres in 1966-67; and in the same period the produce rose from 3,335,000 tons to 8,070,000 tons of raw canes. Along with sugar cane, mention must be made of another cash crop, tobacco. Although tobacco is not a very substantial component in the national economy producing about 37,000 tons of leaves occupying 113,000 acres of land, its contribution is quite significant in the local economy. The distribution of the crop is confined mainly to four districts (Rangpur, Dinajpur, Mymensingh and Dacca) where sandy loams are available with adequate moisture.

The other major components of the agricultural sector are fishery and livestock accounting for about 9% and 11% respectively. Both are crucially important for subsistence and/or cash.

Having been endowed with a vast water network and a bay front, Bangladesh has two distinct and equally potent fishery resources: (i) inland fisheries and (ii) marine fisheries. The scanty information available on inland fishing makes it clear that organized commercial fishing on a truly large scale is not prevalent in Bangladesh. Inland fishing takes place wherever rivers, ponds,

streams, beels (depressions and swamps) or any other water bodies are found. But significant concentration in any one area does not exist. Estimated areas of important fisheries are:

Rivers (including their tributaries and distributaries)	4,500 miles long
Coastal area	340 " "
Estuaries	410,000 acres
Beels, Haors (swamps and depressions)	724,000 "
Brakish water ponds	39,000 "
Fresh water impoundments	189,000 "

Source: Ahmed, K.; Agriculture in East Pakistan, Ahmed Publishers, 1964, Dacca.

All of these areas are potent sources of excellent fish and prawns. In 1961 it was estimated² that 75% of the people catch their own family fish needs, and the other 25% buy fish, but nearly all of it is of fresh water origin and practically all sea fish of edible quality is available for export. But deep-sea is still unorganized. Thus in spite of the high productive potential of fisheries actual production of fish in the country is surprisingly low:

(In Metric Tons)

	1951-52	1959-60	1963-64	1965-66	1968-69
Inland	}	}	204,000	214,000	219,000
Marine	}	}	46,000	45,000	53,000
Total	175,000	218,000	250,000	259,000	272,000

Source: Pakistan Year Book 1971 and 20 years of Pakistan in Statistics.

² Little, Arthur D.; Industrial Survey of East Pakistan, Final Report to the Government of Pakistan Planning Commission, August 1961, p. 182.

It may be mentioned here that due to prejudices crabs, sea-frogs, oysters, mussels and snails are considered inedible and thus an enormous amount of marine resources are simply wasted. While the whole range of these so-called "inedible" marine resources have the potential of earning valuable foreign exchange, only frog-legs are being exported and that also only recently.

Unlike the technological practices of the Western countries, livestock production in Bangladesh is carried out in small scale as a part of crop farming. This has a practical necessity - livestock yield the necessary draught power for the crop farming and at once supplement the subsistence economy of the peasants. Livestock raising as a single means of livelihood is not very popular in the country - livestock holders as professionals have on the average poorer number of animals than farm holders (2:4) and usually are poorer in their economic status. Since livestock raising is predominantly a part of crop farming, the animals are scattered over a very large number of holdings - 6.14 million farm holdings own 96.3% of the cattle and the rest belong to 325,000 livestock holdings. But the distribution between the farm holdings again is uneven. The small farms (below 2.5 acres) which represent nearly half of the total farms in the country own only 24% of the livestock and the medium sized farms (2.5 - 12.5 acres) representing 45% of the farms contribute 64% of the livestock units. That means more livestock are kept on larger farms than on small ones.

During 1945 to 1960 cattle population in Bangladesh increased by 31%; poultry birds have perhaps decreased due to increased consumption, recurrent diseases and flood. To what extent the livestock resources have been destroyed by the army actions is not known. However, for the time being Mr K. Ahmed's estimates may be used as a bench mark:

51% Work animals	=	9,838,000 (including horses and dry-cows)
21% Milch animals	=	4,085,000
28% Young stock	=	5,474,000
		<hr/> 19,397,000

Whether the numbers shown are significant or not, or whether these are adequate, will be examined later but, it is important to take note of some peculiarities here: (i) although work animals are an integral part of farming, only 65% of farmers have work animals; (ii) of the total milch animals 45% are dry; as a result (iii) only 38% of agricultural holdings have milch animals and further (iv) the milch animals are concentrated in the big farms (82% of farms of over 25 acre size have milch animals while only 16% of farms of under half-an-acre size have the fortune to own milking cows). In any case most of the milking cows and buffaloes are reared for production of milk for family consumption.

It is important to point out that in relation to the total GDP in the agricultural sector, although the value of production in both fishery and livestock have risen

significantly, their relative position in terms of contribution to the total agricultural production has slightly declined. This is a reflection again of the desperate preoccupation of the food production sector in the subsistence level in trying to meet the basic cereal requirement. Cattle raising failed in the fight for land for more food crops. However, the role of livestock production even at this dismal scale has increased dramatically over the years in export promotion. On the contrary the position of fishery in export has reduced to one-fifth of its contribution in 1962-63. Clearly the role of fishery in the cash economy has been dwindling at a very fast rate in spite of its increased production in absolute terms. The reason is not hard to discover - more and more fish is being consumed by the subsistence demands of the increasing number of mouths. (This will be discussed in the context of present standard of living later.)

Contribution of forestry in the agricultural products of Bangladesh is remarkably low although forest resources are not quite insignificant - 5.54 million acres. The area under forest expanded from 2.98 million acres in 1947-48 to about 5.45 million acres in 1955-56. But in the following years the area increased at a snail's pace, obviously due to the shrinking man land ratio. Forest areas are scattered mainly on the outer fringe of the country and as such they do not stand in the way of whatever expansion in cropping may be possible in the

interior. Mixed tropical forest and bamboo cover the major part of the highland forests covering Chittagong Hill Tracts, part of Chittagong and Sylhet district. Recent plantations there include teak and soft wood to meet demands of urban market and the plywood/veneer industries. Experimental planting of rubber is being carried out with some success in the same area. The lowland forest is mainly comprised of the Sundarban in the southern part of Khulna district where the trees are peculiar to tidal swamps of brakish water and clayey soil. About 70% of timber and 55% firewood of the country is provided by the Sundarban. The rest of the lowland forest lies in the border of Dacca and Mymensingh district where the forest consists of mixed deciduous trees with a predominance of 'Gajari' and 'Sal'. But the limited amount of raw material available here is too small to be important from the industrial point of view.

Bangladesh is exceptionally poor in her endowments of mineral resources. Since most of the country is an alluvial plain of recent origin, only a small amount of non-metallic minerals and natural gas have been found here so far. The history of excavation is also very recent. As a result the contribution of mining and quarrying in the GDP is extremely small. Limestone is now being quarried from the deposits of Sylhet district and similar deposits are known to exist in Chittagong Hill Tracts and the offshore island of St. Martin's. A small deposit of lowgrade china clay has been found

near Bijaypur in Mymensingh district where the estimated workable reserve is about 200,000 tons. Both limestone and clay are being quarried since 1961 at the following rate:

	1960- 61	1961- 62	1962- 63	1963- 64	1964- 65	1965- 66	1966- 67
	(in tons)						
Lime- stone	9,138	21,021	16,342	12,746	10,086	57,620	261,795
China clay	388	438	433	826	1,184	1,478	2,657

Source: 20 years of Pakistan in Statistics

Thick beds of coal were encountered in a drill hole for oil in Bogra district. The beds are thought to extend from Western Bogra to Rajshahi and the total reserve is estimated to be 700 million tons. Peat deposits have been found in a number of places and the biggest deposits are known to lie in the Boghia Chanda Beel in Faridpur district and in Kola-Mouza in Khulna district with estimated reserves of 125 million tons and 8 million tons of dried peat respectively. No attempt has yet been possible to quarry these mineral deposits.

Search for oil led to the discovery of many gas fields in Bangladesh and most of them are concentrated in Sylhet district. The estimated reserve is believed to be sufficient for commercial and domestic needs for the country for a considerable period of time. Gas is now being supplied to some industrial establishments and domestic premises in the capital city only. The

following table shows the history of gas reserves, its quantity and present performance:

Location	Year of discovery	Estimated Reserve (in million c.ft.)	Utilization up to 1970 (in million c.ft.)
Haripur	1955	430,000	61,000 (18,990) BBS
Chatak	1959	20,000	
Rashidpur	1960	1,060,000	
Kailash Tila	1962	600,000	
Titas	1962	2,250,000	
Habiganj	1963	1,280,000	
Bakharabad	1969	1,970,000	

Source: Pakistan Year Book 1971

Note: Information published by the Bangladesh Bureau of Statistics on gas reserve and utilization varies significantly from those provided by the Pakistan Year Book. According to BBS the reserve is of 5.45×10^{12} c.ft. of which 18,990 million c.ft. have been utilized up to 1970.

Indigenous power resources of Bangladesh are allegedly very limited. Commercial quantities of fuels in the form of oil and coal had not been available in the past. Although the country has several thousand miles of flowing rivers and their distributaries, their hydro-electric potential is considered to be quite limited owing to the flat terrain. Thus the alternative technique of power generation was chosen from the various methods of thermal power generation consuming coal and diesel (both imported). However, in the early 1960s the first hydel

power project^{*} was completed with an installed capacity of 80 M.W. Since then there has been remarkable expansion in thermal power generation but none in hydel power. Thanks to the extraction of gas, many of the new thermal power stations are now being fed by gas. Blue-print for a nuclear power plant was prepared with a designed capacity of 200 M.W. but, due to the regional policy of discrimination by the Government of Pakistan, the project did not materialise. The position of power generation in the country is summarized below:

	Power ⁺ generation 1965	Installed ⁺ capacity 1970	Power generation 1970	Target 1975
Hydel	80 M.W.	80 M.W.	80 M.W.	130 M.W.
Thermal	120 M.W.	470 M.W.	408 M.W.	751 M.W.
Nuclear	-	-	-	200 M.W.
Individual Establish- ment	100 M.W.	-	120 M.W.	100 M.W.
Total	300 M.W.	670 M.W.	608 M.W.	1181 M.W.

Major components of the power generation target 1975:⁺

Ashuganj (Thermal)	120 M.W. (1 unit of 60 M.W. completed)
Ghorasal do.	110 M.W.

^{*} The project is popularly known as Kaptan project. It is situated at a site about 30 miles from the Chittagong city on Karuaphuli river in the Chittagong Hill Tracts District. The designed capacity is 120 M.W.

⁺ Information on both the places have been compiled from the Pakistan Year Book 1971 and the Economic Survey of East Pakistan 1969-70.

Shahjibazar (Thermal)	104 M.W. (completed)
Siddhinganj do.	50 M.W. (completed)
Khulna do.	60 M.W.
Chittagong do.	60 M.W.
Karnaphuli (Hydel)	50 M.W.
Rooppur (Nuclear)	200 M.W.
Emergency Power (Thermal)	37 M.W. (completed)

Clearly, emphasis is laid heavily on thermal power generation as the only viable strategy. The next largest component is nuclear power generation. During the period of partnership with Pakistan, the issue of nuclear power project was being pressed more or less as a symbol of regional politics, a claim for parity. But now that the parity issue is irrelevant, whether the economic feasibility and social desirability of the nuclear power plant will be given a fair reassessment, remains an open question. Finally, the conspicuous absence of any imaginative hydel power project is to be noted here with great concern.

Manufacturing sector in the economy of Bangladesh accounts for only about 9% of the total GDP, of which 6% is comprised of large scale industries and 3% small scale. Given the resource endowment in Bangladesh discussed so far it should not be difficult to understand the basis of such a low proportion of contribution from manufacturing into the GDP. However, over the past decade there has been a consistent progress in the share of the large scale industries and in absolute terms the component has

expanded more than three times its size in 1961-62. On the reverse, the small scale industry has been losing its relative position in the total make-up of the industrial sector; and in absolute terms it has shown no spectacular progress. One cannot be too far wrong to argue that the expansion in the large scale industry has taken place at the cost of the small scale. (This issue in particular will be examined more closely later.) It is significant to note that jute and hide/skin manufactures have been expanding consistently as export commodity replacing raw products which are usually processed/handled by small scale establishments. Further, it needs to be mentioned here that jute textiles happens to be the largest single component of the large scale industries using indigenous raw material, occupying the most dominant position and accounting for about 27% of production in that part of the sector (Table 4.6). In terms of growth, jute textiles has had a record performance of 16% per year during 1965-70. The next substantial components of the manufacturing sector are cigarettes and cotton textiles accounting for about 19% and 13% respectively. Of late, the setting up of the steel mill^{*} and the oil refinery⁺

^{*} The first steel mill of the country, Chittagong Steel Mill, went into production in 1967 with capacity of 150,000 tons of steel ingots to be expanded by an additional capacity of 100,000 tons. Production is based on scrap imported from abroad. Reportedly the C.I. sheets produced by the mill turned out non-competitive with the imported C.I. sheets both in price and quality.

⁺ The first oil refinery in the country, Eastern Refinery, went into production with a capacity of 1.5 million tons.

has added substantially to the total value of production in the manufacturing sector. It is worth reminding here that the inputs for both the steel mill and the oil refinery are imported in toto and those for the cotton textiles in part (78%).

As reflected in the Third Plan (1965-70) allocation, the public sector programme emphasized on the production of agricultural inputs (fertilizer), capital goods (machines and tools), jute and sugar, paper and petrochemicals. Of these, fertilizer and machine-tools are of special significance. Starting in 1964-65 with a total production of 72,000 tons of urea only, the Third Plan (1965-70) envisaged a total production of 958,000 tons (consisting of 357,000 tons of urea, 307,000 tons of T.S.P. and 294,000 tons of N.P.K.). The following projects were under implementation:

Urea Factory (Ghorasal) - completed	340,000 tons
T.S.P. I (Chittagong) - completed	32,000 "
T.S.P. II (do.)	120,000 "
Ammonium Sulphate (Fenchuganj) - completed	12,000 "

The Third Plan allocation made provision for setting up of a machine-tools factory, the first phase of which was scheduled to be completed by 1972. When completed the factory will have a capacity of producing 12,000 tons of machine-tools and related accessories. In the meanwhile, reportedly, assembly of simpler types of machinery from imported components has already started on a small scale.

In spite of the burgeoning position of the large scale industries, the economy is still quite considerably hinged on small and cottage industries particularly in the production of two indispensable consumer items: salt and cloth.

"Cottage industries' share in the output of cloth has been 64% and small industries 26%, leaving the largescale industries with only 10% (not counting imports)."³

Through some Government help in the way of demonstration centre and warehouse facilities, salt production from sea water has increased nearly four times during the last decade and thus contributed effectively towards import substitution. Besides, cottage industry is much more significant in terms of employment:

"Cottage industry employs more than three times the labour force in large- and small-scale industries taken together."⁴

But the nature of employment is very different here from the conventional meaning of the term. Most of the cottage industries are based on family labour using insignificant, if at all, hired wage-labour. The output is mainly for sale to supplement the subsistence economy. Even the professional weavers switch from the loom to the plough at the time of sowing and harvesting. The technology employed is almost entirely traditional and the operations are carried out within the domestic premises. Thus cottage industry appears to be a part of agriculture.

³ Khan, A.R.; The Economy of Bangladesh, Macmillan Press, London, 1972, p. 59.

⁴ Ibid., p. 59.

Some discussion of economic infra-structure in relation to the natural endowments is also indispensable in introducing Bangladesh and the peculiarities therein. The unique hydrologic and geo-morphologic environment of the Ganges-Brahmaputra delta has rendered most of the central areas of Bangladesh subject to frequent floods of severe magnitude.* The country as a whole is subjected to heavy monsoon precipitation followed by a very dry spell. All these together make it imperative to concentrate on water management and control as a strategy of indigenous resource use towards the well-being of the entire population. Water management is the crux on which the sustenance of the nation depends. Withstanding this fundamental purpose, the primary objective of water resources development programmes in the Third Plan have been (i) to protect land for cultivation by proper drainage and embankment against excessive flooding; (ii) to bring more winter-fallows under plough through assured supply of water; and (iii) to expedite research and investigation on the viable ways of flood control and irrigation. From the point of view of allocation, the issue received only lip-service. Within the limitations of financial allocation, water resource development schemes consisted of the following only (figures mostly rounded):

* The peak flood flow contains 5 million cusecs and the concurrent sediment load is about 2.4 million tons a year for the three main rivers, viz.: Padma (local name of the Ganges), Jamuna (local name of the Brahmaputra) and Meghna.

Project	Purpose	Command Area (in acres)	Net area served 1969 (in million acres)
Coastal Embankment	Tidal wave protection	(2262 miles of embankment with 745 sluices + 87 polders covering nearly) 2,000,000	1.63
Brahmaputra Flood Embankment	Flood protection	135 miles 580,000	.58
Ganges-Kobadak	Irrigation	350,000	.085
Ground Water Development and Pump Irrigation	Irrigation	138,000	.073
Multipurpose	Drainage, flood control and irrigation	97 miles 160,000	.016 (irrigated)
Tube Wells and Pumps (by Agricultural Dev. Corpn. and Wapda)	Irrigation	700,000	.70

Sources: Statistical Digest of Bangladesh, BBS, Dacca, 1971.
Economic Survey of East Pakistan 1969-70; Planning Dept., Dacca.

Obviously the fundamental problem of floods remained unsolved. In pretext of the "thousand years war with India"* the root cause of flood was always side-tracked - while the vast section of the river system of Bangladesh traverse a great length of Indian territory, flood control can never be accomplished downstream alone without co-operating with the upstream riparian country. This remained the major bottleneck in solving the flood problem during years of association with Pakistan. In the event of excessive and/or untimely flood the loss is colossal and the consequence proves disastrous for the country. Further, since the probability of flood is ever present, incentive of the peasants is nipped in the bud. Under the pre-conditions of perennial flood, cropping had to be adjusted in favour of low-yielding Aus which is a tall variety rice reasonably able to cope with gradual rise of flood level. Needless to mention that flooding discourages use of manure/fertilizer, better seed or any investment in improved technology. On the other hand, development of irrigation for winter cropping is yet quite insignificant, 0.88 million acres. Clearly, agricultural infra-structure development in Bangladesh is far below the requirement in view of the adverse problems posed by the free-play of nature. Agricultural infra-structure so far has had very little to contribute to the

* Pakistani leaders believe that they have to fight with India for centuries to come. This was declared by Z.A. Bhutto at the U.N. Security Council meeting in December 1971 in the following words: "We will fight for a thousand years."

largest and the most vital sector of the economy.

Physiography, terrain and climate again have combined in such a unique way so as to render Bangladesh one of the most extraordinary regions in terms of transportation and communication, at once difficult and permissive. The scope of a well distributed land transport system is greatly handicapped by the presence of vast rivers and their innumerable tributaries and distributaries. Soft ground, inevitable flooding and heavy monsoon precipitation make it extremely difficult to build and maintain roads. Almost indispensably rail and road alignments are to be built on raised embankments. Yet washed away or submerged sections of roads and rail tracks are not uncommon happenings in the country. Porous and saturated soil cannot hold the road surface intact for long particularly during the rainy season. Besides, the road/rail system truncated by the intervening water courses, needs to be connected by numerous bridges and ferries. Conversely, the vast network of water courses which remains a barrier to land transport, provides an elaborate natural system of waterways connecting the remotest parts of the country particularly during the rainy season. Even in the dry winter most of these waterways remain suitable to use by inland water craft, mostly country boats which are not subjected to any draft limitations. However, the country boats, as may well be expected, are very slow moving vessels and as such mobility and accessibility become a time-consuming

matter.

Under the circumstances the Third Plan (1965-70) set out for a "programme of integrated system of transport" encompassing roads, railways and waterways. The objectives enunciated therein are (i) maintenance, rehabilitation and modernization of the existing facilities and (ii) expansion of the transportation network and capacities in relation to traffic needs. In terms of allocation the plan provided mostly for the improvement of land transport system, namely road and rail receiving 47% and 40% of the allocation respectively. The remaining 13% or so went to inland water transport including the shipping corporation. Following the investment, total length of metalled roads increased from 1,145 miles in 1960-61 to 2,398 miles plus 14,844 r.ft. of bridges and culverts, but still leaving gaps to be bridged. A part (< 4%) of the investment in road transport was spent on expanding the number of public service vehicles. In rail transport the development programme consisted mainly of rehabilitation of tracks and modernization of the rolling stock. As a result, rail route mileage increased by a meagre 10% during the last decade. At any rate the facilities of both the road and railway system together are dismally inadequate.

"Metalled roads and railway route mileage together per square mile of territory in 1970 = 0.76,"⁵

points out Dr. Khan. Considering the population density

⁵ Khan, A.R., op. cit., p. 80.

the figure is abysmally low. Nevertheless the system is undoubtedly over-used as will be pointed out in a later chapter. Due to the same reason the system is unable to cope with mildest emergencies and at the same time suffers from decreasing efficiency in terms of maintenance and operation.

On the other hand, the programme of water transport development consisted only of construction of 5 major inland river ports, 114 motor-launch landing stations (pontoons), 12 passenger terminals/cargo sheds and 18 timber jetties. In addition, hydrographic surveys have been carried out for 667 miles of waterways and as a pilot project 50 country boats have been fitted with kerosine and diesel engines. Obviously nothing has been done in terms of provision for the faster safe movement of people and goods via a fleet of public vessels. Passenger and cargo movement is still entirely at the hands of private entrepreneurs who are manifestly interested in ever widening profit margin by allowing their vessels to be over-loaded, over-utilized and under cared. Capsizing of over-loaded motor-launches involving hundreds of lives is as frequent news in Bangladesh as motorway accidents in the Western countries.

In terms of local level infra-structure, mention must be made of the Rural Works Programme which was claimed as an integral part of the Third Plan. The programme was committed to bringing infra-structure facilities such as roads, culverts, embankments,

community centres, at the doorstep of the peasant. Under normal Works Programme efforts consisted mainly of development of village roads in order to connect the inaccessible areas to market places. Altogether about 3,050 miles of village roads were constructed and about 32,250 miles of old village roads improved. In addition about 22,600 culverts, 500 miles of local embankment, 3,360 Community Centres and 390 Thana Training and Development Centres were constructed. In spite of the physical achievements, the programme remained a failure mainly because of the wrong motivation, lack of sense of true purpose and absolute lack of honesty. Many of the facilities were ill-conceived and ill-constructed, and hence unusable. Lacking public participation, the roads and culverts once damaged by natural causes remained unrepaired and out of use. The causes of the failure of the Works Programme will be examined later in Chapter 9.

At the end it must be made clear that although the economy of Bangladesh is now said to be undergoing major transformations following the war and the subsequent independence, there is no reason to assume that major structural transformations are taking place. In view of the short time between independence and now, there is hardly any reason to believe that there has been any significant changes in the structural relationships. Conceivably the transformations have taken place and still are, in economic organizations. For instance, the erstwhile regional trade with West Pakistan now had to be

substituted by external trade involving foreign exchange, and concurrently the opening up of trade with India in order to meet the short term supplies which had ceased coming from Pakistan; nationalization of a vast number of derelict establishments left by Pakistani groups and individuals - all these constitute dramatic organizational shifts in considerable scale.

Table 4.1

Land Utilization in Bangladesh
(Total Area reported = 35,281,000 acres)
(in thousand acres)

Year	Area not available for cultivation	Forests	Cultivable waste	Cultivated Area		Area sown more than once	Total cropped area	Cropping ratio
				Current fallows	Current sown area			
1950-51	4761	3151	4506	1693	20542	5708	26250	1.18
1955-56	5546	5456	1994	1203	20452	5509	25961	1.20
1960-61	5616	5465	1898	811	20861	6732	27593	1.27
1965-66	6294	5400	1255	730	21601	7940	29541	1.32
1968-69	6496	5545	825	791	21624	9511	31135	1.38

Source: Statistical Digest of Bangladesh, Bangladesh Bureau of Statistics, Dacca, 1971

Table 4.2

Land Utilization by Crops

(in thousand acres)

Year	Rice	Other minor cereals	Jute	Pulses	Sugar cane	Oil seeds	Tobacco	Spices and other cash crops ¹	Vegetables and Potato	Total
1950-51	20,007	410	1711	1015	226	723	128	336	537	25,043
1955-56	19,486	492	1716	923	259	850	113	413	597	24,849
1960-61	21,885	376	1518	817	279	778	102	692	423	26,850
1965-66	23,130	333	2090	850	379	742	109	513	429	28,575
1969-70	25,486	568	2465	896	410	858	113	644	211 ²	31,651

¹ Spices include chilis, onions, garlic, ginger, turmeric, corriander, cumin seeds, black cumin, etc.

² Figure represents only acreage under potato. No figures for vegetables available.

Source: Statistical Digest of Bangladesh, Bangladesh Bureau of Statistics, Dacca, 1971; 20 Years of Pakistan in Statistics, CSO Government of Pakistan, Karachi.

Table 4.3

Structure and Changes in the Economy of Bangladesh
(Values at constant prices of 1959-60 - ~~Fig.~~ in million rupees)

(values at constant prices)													
	1949-50 %	1959-60 %	1961-62 %	1963-64 %	1965-66 %	1967-68 %	1969-70 %						
1. Agriculture	Ø 65.2	9042	62.40	10012	61.77	10598	59.35	10757	57.92	11542	56.73	12344	55.31
a. Crops		7039											
b. Livestock		882											
c. Fishing		1040											
d. Forestry		81											
2. Mining and Quarrying		-		2		4		4		8		10	
3. Manufacturing	3.9	912	6.29	1054	6.50	1165	6.52	1433	7.72	1658	8.15	1993	8.93
Large scale	0.6	406	2.80										
Small scale	3.3	506	3.49										
4. Construction, Transport and Power	5.6	1144	7.89	1379	8.50	2016	11.29	2164	11.65	2496	12.26	2843	12.74
5. Services	25.3	3391	23.40	3759	23.19	4072	22.81	4211	22.68	4642	22.81	5127	22.97
Total		14489		16206		17855		18569		20346		22317	

Source: Economic Survey of East Pakistan, 1969-70, Government of East Pakistan Planning Dept.

Note: Services include wholesale and retail trade, banking and insurance, ownership of dwellings, public administration, defence and other services. Transport includes transport, storage and communication. Power includes electricity, gas, water and sanitary services.

Table 4.4
Rice Production and Yield.Acreage in million acres
Yield in million tons

	1959-60			1969-70			Yield Increase
	Acreage (%)	Yield (%)	Acreage (%)	Yield (%)	Acreage Increase (%)	Yield Increase	
Amon	14.29 (67.6)	5.99 (71.4)	14.80 (58.1)	6.95 (59.4)	3.56%	16.02%	
Aus	5.94 (28.1)	2.09 (24.9)	8.46 (33.2)	2.96 (25.3)	42.42%	41.62%	
Boro	0.92 (4.3)	0.40 (3.7)	2.20 (8.7)	1.80 (15.3)	139.13%	350.00%	
	21.15 (100)	8.48 (100)	25.46 (100)	11.71 (100)			

Source: Economic Survey of East Pakistan 1969-70.

Table 4.5 Bangladesh Exports: 1960-61 to 1968-69 (in million rupees)

	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69
Jute (raw)	849.0	849.8	792.9	752.4	845.4	863.1	870.1	758.9	730.7
Jute (manufactured)	310.8	318.8	306.0	314.0	292.9	565.3	568.2	605.5	655.9
Hides and Skin (raw)	28.6	26.7	26.3	25.9	20.1	16.8	5.3	2.0	0.2
Hides and Skin (manufactured)	3.7	5.9	5.6	6.8	12.4	26.6	49.4	43.1	75.3
Fish	38.2	50.9	77.7	67.8	46.0	2.2	10.0	11.8	14.9
Tea	1.1	21.3	6.4	-	10.0	11.0	0.8	-	-
Spices	0.5	0.2	0.2	2.2	3.6	4.9	4.3	4.1	2.2
Cotton	4.2	3.9	4.6	4.8	4.8	1.9	3.1	1.9	1.0
All others	23.0	23.1	29.5	50.2	33.0	22.3	63.5	56.9	62.5
	1259.1	1300.6	1249.2	1224.1	1268.2	1514.1	1574.7	1484.2	1542.7

Source: Economic Survey of East Pakistan 1969-70.

Table 4.6 Rank of Major Large-scale Industries
(in terms of employment and value added)

Industry	Employment Nos.	Rank	Value added (million Rs.)	Rank
Jute Textiles	100,500	1	299.2	1
Cotton Textiles	33,887	2	146.7	3
Tea Processing	9,803	3	115.9	4
Matches	9,101	4	48.5	7
Paper	5,310	5	51.2	6
Cigarettes	3,926	6	214.1	2
Jute Baling	3,588	7	42.6	8
Shipbuilding	3,242	8	11.3	13
Perfumes and Cosmetics	3,217	9	39.1	9
Drugs and Medicines	3,075	10	32.9	11
Iron and Steel	1,778	11	27.8	12
Fertilizer	1,527	12	38.6	10
Rayon	357	13	57.9	5

Source: Economy of Bangladesh, A.R. Khan,
Macmillan Co., London, 1972.

Chapter 5

POPULATION AND LABOUR FORCE

Historical incidences in the area now called Bangladesh during the last few decades have rendered demographic estimation for that part of the world increasingly difficult. Nevertheless, for the purpose of any current estimate and/or future projection, a reasonably dependable bench mark is essential. While bench marks are conventionally provided by national censuses, the decennial census scheduled for 1971 in Bangladesh could not be held due to the political upheaval; and for various reasons*

* Population census figures for 1941 and 1951 show no significant change - this has to be explained in the light of the following factors:

A. 1941 figures are unreliable because (i) during World War II there were lots of chaos and confusion in the administration and record keeping, and (ii) at the time of 1941 census political passion among the Muslims and the Hindus were running high all over Bengal and as such both the communities tried to inflate their population figures in order to get as much area in their respective would-be homeland as possible.

B. 1951 figures are unbelievably low because (i) there were net population losses for the whole of Bengal due to the historical famine of 1944-45, and (ii) during the population exchange following the partition in August 1947, three million Hindus migrated to India and in exchange one million Muslims came to then East Pakistan, thus creating a net decrease of two million people.

1961 census figures are unreliable because the Central Statistical Board, dominated as it was by West Pakistanis, deliberately kept the population figures for then East Pakistan down, in order to win the parity issue in the matters of national resource allocation and distribution.

the decennial censuses carried out in 1941, 1951 and 1961 are not dependable as they are. Whereas, in view of the post-war global population explosion, it is all the more important to have a reliable estimate precisely of the decades following the war. Under the circumstances, therefore, it is indispensable to have a firm estimate of at least 1961 census in order to arrive at a benchmark for 1971.

The latest series used by the Pakistan Planning Commission started with a correction of 1961 population figure by putting 55.57 million for that year and 72.43 million for 1970. The demographers at the Pakistan Institute of Development Economics (PIDE) in consultation with the Population Growth Estimates of the Central Statistical Office (CSO) claim to have made more careful corrections and adjustments and placed the population figure for 1961 at 53.4 million. By now the PIDE estimates have appeared to be more credible than those of the Planning Commission of Pakistan. However, the PIDE made further projections up to 2000 under alternative sets of assumptions. According to the most conservative estimate of PIDE population of Bangladesh stands at 71.5 million in 1970 (Table 5.1). In the estimates referred to heretofore, the Pakistan Planning Commission assumed growth rate of 2.9% p.a. compound while the PIDE assumed 3.15% p.a. compound for 1960-65 period and 3.08% p.a. compound for 1965-70 period. In the light of a partial evidence in Bangladesh as well as

experience of 1971 census in the neighbouring country, India - striking a balance between the two rates of growth seems more sensible adjustment.* Therefore 3% p.a. compound rate of growth may be applied to the PIDE base figure of 1961. Thus we can arrive at a reasonable estimate of 71.8 million people in 1970-71 (mid-fiscal year). But another wave of uncertainty intervened between November 1970 and December 1971 - Bangladesh was struck by a severe natural disaster claiming at least 500,000 lives in November 1970 and between March 1971 and December 1971 at least 1.5 million lives were lost during the political genocide followed by war of independence. Thus, allowing these necessary deductions, the total population comes to about 74.16 million in 1972-73 (mid-fiscal year, i.e. January 1973).

So far future population estimates are concerned,

* The Population Reference Bureau reports: "India, the world's second most populous country, received a somewhat encouraging surprise as the results of the 1971 Census were leased: the total was less than had been projected." Population Profile, Population Reference Bureau Inc., 1755 Massachusetts Ave., N.W. Washington D.C. US 420036, p. 1.

In a survey analysis of data collected in 1952-61 and 1961-62 covering central part of Bangladesh (Dacca, Faridpur and Comilla district), T.P. Schulz found retrospective evidence of declining fertility and child mortality. According to his findings total marital fertility declined about one-fifth. Birth rate in the early 60s was still high but Schultz concluded that there may be reason to anticipate further reductions in birth rates, particularly among older women. - Schultz, T.P., Retrospective Evidence of Decline of Fertility and Child Mortality in Bangladesh, Demography, August 1972, p. 428.

the picture is beclouded with much more serious controversies, doubts and uncertainties. According to the projection of the Harvard Advisory Group, population would rise to about 106 million by 1985. For the same date PIDE estimated a total population of 139.9 million, 123.8 million and 108.5 million respectively under three different sets of assumptions.* Apparently, the lowest PIDE projection is somewhat closer to that of the Harvard Group, but needless to mention that population loss of 1970-71 and the subsequent impact on demographic trend could not have been incorporated into these estimates. Reasonable allowances are therefore warranted in a revised projection of population growth. One further point needs to be emphasized here - that is, while projection under assumption III may appear comfortable to our conservative stand, the assumption that growth rate would fall to 2.48% p.a. by 1985 seems to be overly optimistic. Assuming a conventional success in family planning programme, we cannot expect the growth rate to fall significantly below 3% p.a. Even the conventional programme came to a halt in 1971-72 when planning and administration came to a suspended state. Following the war of liberation, the government had to respond to more urgently pressing issues like provision of food, relief and rehabilitation work. Conceivably, it will take some time even to recapture the conventional tempo in family planning programme, let alone a break-through.

* See following page.

(Footnote from p. 119)

The assumptions are as follows:

	Assumption I			Assumption II			Assumption III		
	1975-80	1980-85	1985-90	1975-80	1980-85	1985-90	1975-80	1980-85	1985-90
	(per thousand)			(per thousand)			(per thousand)		
Birth Rate	54.09	53.80	53.45	45.24	41.41	42.78	37.99	32.42	33.67
Death Rate	9.44	7.76	7.58	9.19	8.39	7.66	9.03	7.59	7.78
Growth Rate	4.46%	4.60%	4.59%	3.60%	3.30%	3.51%	2.90%	2.48%	2.59%

Source: Population Projection for Pakistan, PIDE, Monographs in the Economics of Development No. 17.

Hopefully, the First Five-year Plan of Bangladesh (1973-74 to 1978-79) will emphasize population control quite considerably, yet no significant impact would be visible because a great deal of ensuing achievements will be offset by the making up of backlogs. Thus by 1980 perhaps only a base line will be created wherefrom a humble break-through may be attempted. Given the existing socio-cultural climate which is not at all congenial for family planning campaign, any initial effort at a 'break-through' cannot be expected to be anything more than an attempt to create the receptive environment. Evidently, therefore, no significant fall in the rate of population growth may be expected before 1985.*

Under the circumstances, therefore, we can assume, from a very conservative view-point,⁺ that the population

* This view is only reassured when experience in India is examined. In spite of a continued vigorous programme, birth rate in India has come down to 41 per thousand in 1972. In the light of this example, PIDE's assumed 37.9 births per thousand in 1975-80 and 32.4 births per thousand in 1980-85 is over-ambitious. In 1972 the Population Reference Bureau, Washington D.C., published birth rate for Pakistan to be 51 per thousand.

⁺ Our conservative stand derives strength from the Logistics Growth Law (Pearl and Reid 1924) which testifies that during later stages of growth environmental resistance becomes the dominant growth inhibitor and tends to limit population size to some upper bound. The Logistics Growth Law is stated as follows:

$$\frac{dN}{dt} = rN(1 - \frac{N}{M}) \quad \text{where } r \text{ is constant and } M \text{ is the upper bound}$$

When plotted, the phenomenon takes the shape of 'S'. As tested, this law implies that when the growth rate passes through a maximum, the upper bound is obtained by simply doubling the population at that time. Austin and Brewer maintain that the logistics concept must be implicit in any /

of Bangladesh will continue to grow at 3% p.a. compound up to the end of the first year of the First Five-Year Plan, i.e. 1974-75. During the following decade, i.e. between 1975-76 and 1984-85, growth rate will fall only very slightly to 2.9%. Between 1985 and 2000 birth rate may be assumed to fall to 2.5% p.a. thereby creating conditions for a progressive fall in the rate of growth towards an asymptote. On this basis we can come to a revised projection wherein the population for 1974-75, 1984-85 and 1999-2000 would stand at 78.6 million, 104.7 million and 151.6 million respectively. This means that the current population will be more than doubled by the end of the century. It must be reminded here again that our projection is based on a very optimistic set of assumptions which could be met only under the very best efforts put up by the country. Given the present trends in the country, the projected figures are the least that we could expect to have to cater for. It is probable that there will be more people than we are estimating here and now.*

(Footnote contd. from p. 121)

any realistic prediction even though the logistics hypothesis by itself is not a valid description of human growth. For further discussion see Austin, A.L. and Brewer, J.W.; World Population Growth and Related Technical Problems, Spectrum IEEE, December 1970.

* Referring to the UN report sponsored by the UN Relief Operation in Dacca, the Ecologist states that with the present population of about 74 million (June 1973) it is estimated that with no reduction in the birth rate, the population of Bangladesh in 2003 will be 229.2 million and that even with a drastic reduction it will be 153.3 million. - The Ecologist, Vol. 3, No. 6, June 1973, p. 201.

Table 5.1 Population Projections for Bangladesh
(in millions)

Year	Pakistan Planning Commission ¹	Rate of Growth	Pakistan Institute of Development Economics ²	Rate of Growth	Revised Pro- jection ³	Rate of Growth
1959-60	53.90		52.62		52.62	
1960-61	55.57			@	53.40	
1961-62	57.29	@		3.15%	55.00	
1962-63	59.07	2.9%		p.a.	56.65	
1963-64	60.90	p.a.		com-	58.36	
1964-65	62.79	com-	61.45	pound	60.10	
1965-66	64.61	pound			61.90	@
1966-67	66.48			@	63.76	3%
1967-68	68.41			3.08%	65.68	p.a.
1968-69	70.39			p.a.	67.66	com-
1969-70	72.43		71.52	com-	69.70	pound
1970-71				pound	71.80	
					(- .5)	
1971-72				@	73.43	
				3.08%	(- 1.5)	
1972-73				p.a.	74.16	
1973-74				com-	76.38	
1974-75			83.23	pound	78.66	
1975-76					80.95	@
				1975-80		2.9%
				@ 2.9%		p.a.
1984-85			108.52	1980-85	104.70	com-
				@ 2.48%		pound
1985-86				1985-90	107.33	@
				@ 2.59%		2.5%
1994-95			140.08	1990-95	134.05	p.a.
				@ 2.58%		com-
1999-			158.37	1995-		pound
2000				2000	151.66	
				@ 2.48%		

1. Figures as quoted by the Planning Dept. in the Economic Survey of East Pakistan 1969-70, Dacca, 1970.
2. Figures represent the lowest of the three alternative Projections made by the Pakistan Institute of Development Economics in Population Projection for Pakistan - monographs in the Economics of Development, No. 17.
3. Revised Projections are the author's own estimates.

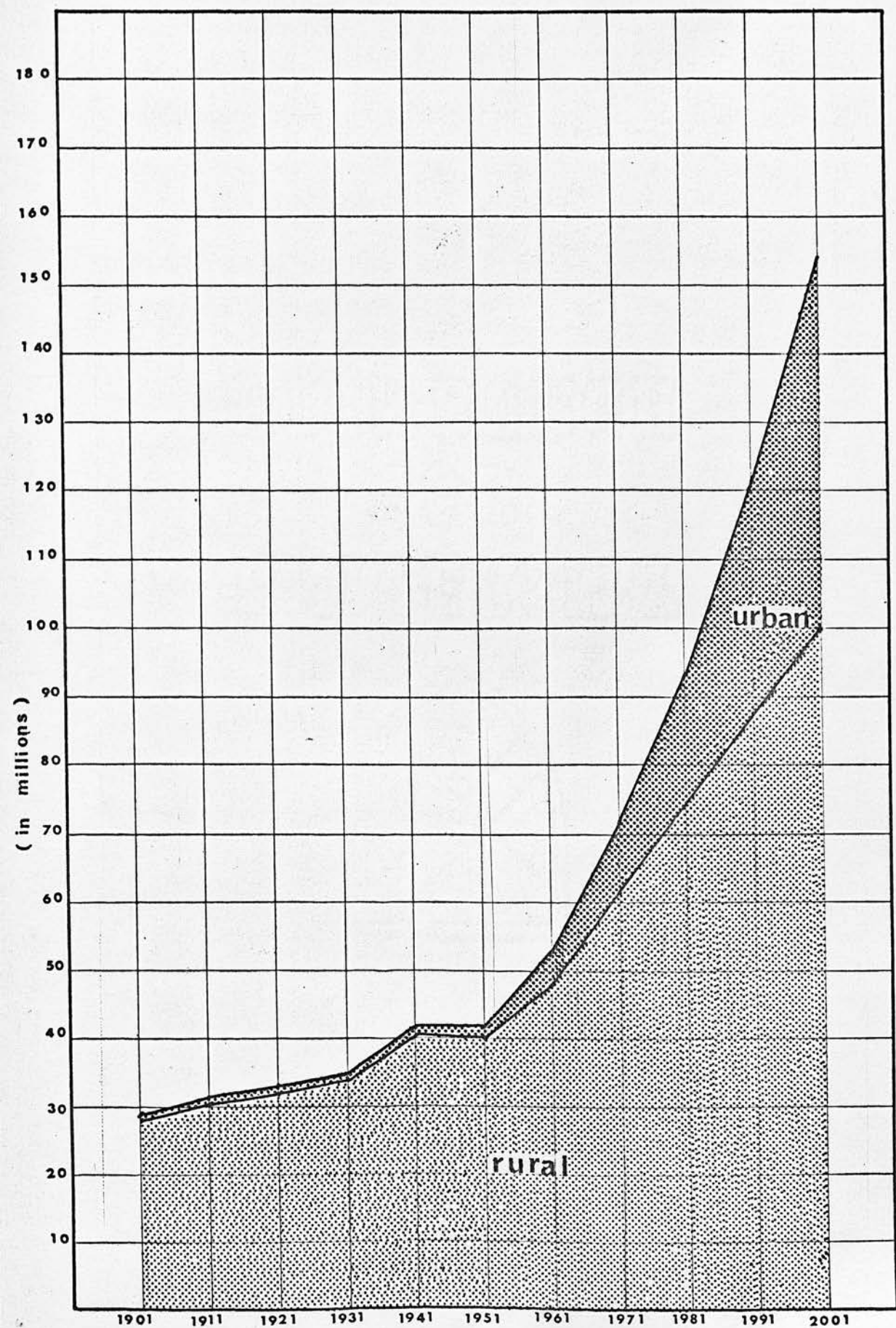


Fig. 5.1 Demographic Outlook of Bangladesh

So far as the identification of rural and urban component of the population is concerned, we can hardly do anything more than looking at the past records and thereby isolate the trend. Between 1901 and 1961, urban population increased at more than twice the rate of overall population growth; nevertheless, the proportion of urban and rural population in 1951 was 4.4% and 95.6% respectively and in 1961 it stood at 5.2% and 94.8% respectively. The trend of growth in the urban sector of population during 1951-1961 decade cannot be called significantly different from that of the previous decades. Altogether, it has been a story of slow but steady process of urbanization. Although it is generally held that urban population has increased at a much faster rate in the 1960s, there is no statistical basis to substantiate this observation. During the Third Five-year Plan (1965-70) it was estimated that by the end of the plan period about 1.61 million non-agricultural jobs will be created. Since the actual development expenditure is estimated at about 60% (71% in the public and 48% in the private sector) we can assume that perhaps 60% of the projected jobs or about 966,000 jobs were created in the urban sector. If we further assume that 50% of these new job-holders were single and/or lived without their families and the rest had an average family size of five persons then the total number of new urban dwellers comes to about 2.9 million. This makes a total urban population of 5.5 million or 7.6% of the total population

Table 5.2 Urban Population 1901 to 2003

Year	No. of people (in millions)	% of Total	Rate of increase
1901	0.702	2.5	-
1911	0.807	2.6	14.9%
1921	0.878	2.7	8.8%
1931	1.076	3.1	22.5%
1941	1.537	3.7	42.8%
1951	1.820	4.4	18.4%
1961	2.641	5.2	45.1%
1971	5.539	7.6	112.0%*
1975	7.800	10.0	42.0%
1985	27.500	26.0	252.0%
2003	55.300	36.0	100.0%

Source: Figures for 1901 to 1961 are taken from Census of Pakistan 1961, Vol. 2.

Figures for 1971 and onwards are projections.

* Although the rate itself looks very high, more than this rate of growth had already taken place in some cities between 1951-61. As a matter of fact one city had experienced more than 200% growth during the period. See Pakistan Census 1961, Vol. 2.

by the end of 1970. So far, popular observation and simple calculations indicate that the population of Bangladesh is overwhelmingly rural.

As for the future, the Harvard Advisory Group predicted that by 1985 urban population will be 27.5 million which means about 26% of our total projection for 1985. Referring to another projection made by the Harvard University Center for Population Studies, the UN Relief Operation in Dacca reports¹ that even with a drastic reduction in fertility from 6.5 TFR (Total Fertility Rate meaning average number of children born to each woman during her lifetime) to 2.2 TFR, urban population will grow to 55.3 millions. This means that there will be a tenfold increase in the urban population over the figures estimated for 1970 and that by the turn of the century urban population will constitute about 36% of the total. What this will mean in terms of economic and environmental salvation of Bangladesh will be given due attention later on but as for the present, the foregoing discussions are the most that are allowed by circumstances towards building up a frame of reference of future urban population in Bangladesh.

Following these guidelines and taking the current reports from Dacca² into consideration, we can confidently say that by 1975, at least 10% of the total population or about 7.8 million will become urban dwellers.

¹ As cited in the Ecologist, op. cit., p. 201.

² Private communication.

Density

In 1961 the average density was 922 persons per square mile; if the river areas were excluded, the average density would be 979 persons per square mile. But the actual density varied from 76 in the Chittagong Hill Tract district to about 4000 persons per square mile in some rural areas of Dacca district. According to Professor Ahmad's analysis the highest rural densities per square mile on Thana (Police Station Area Unit) basis reached amazingly high figures: Narayanganj (7,262), Fatulla (3,532), Tangibari (2,420) and Dohar (2,699) in Dacca district, Panchlais (5,279) and Double Moorings (4,882) in Chittagong district and Ramganj (2,233), Begumganj (2,315) in Noakhali district.³ Some of these areas, though designated as rural, have apparently been influenced by increased commercial/industrial activities as well as by conurbation. Nevertheless, densities of over 2000 persons per square mile are fairly common in Dacca, Comilla and Noakhali districts particularly along the lower courses of the Padma and the Meghna and the area of their confluence having common geographical features of heavy annual inundation, rich annual silting, easy riverine communication channel, etc. In the central core region of the country, i.e. the areas adjoining the confluence of the Padma and the Meghna and their active distributaries, more than 2 million people lived (in 1961)

³ Ahmad, N., *An Economic Geography of East Pakistan*, Oxford University Press, London (2nd ed.) p. 331.

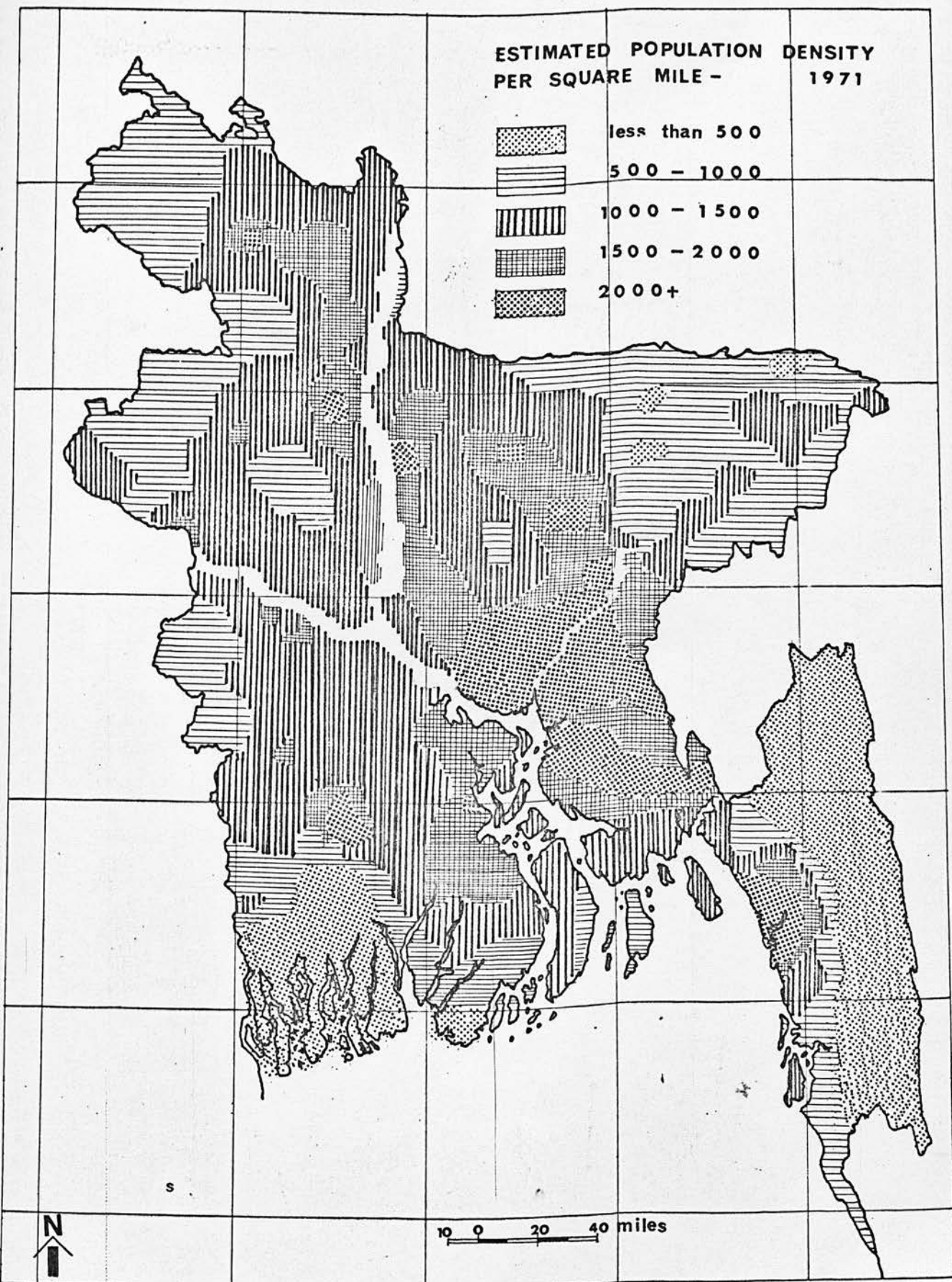


Fig. 5.2 Population Density Situation

in an area of approximately 550 square miles - a density of more than 3600 people per square mile. In more aggregate terms the high density population belt which coincides with the active part of the delta has had a density of over 1500 persons per square mile, and contained 48% of the total population in less than one-third (1500 sq. miles) of the total area.

There is hardly any parallel to the density situation in Bangladesh except perhaps few city-based states like Hong Kong or Singapore, Malta or Monaco. In 1971 there were, reportedly, 1329 persons per square mile in average compared with 471 in India and 518 in the agriculturally productive areas of China. Assuming that there has been very negligible rural to rural internal migration and that rural to urban migration has been no more than proportionate and further that the increase in the average density has been proportionately contributed by the distribution pattern of 1961, the figure in the High Density Belt more particularly that of the core region must be staggeringly high by now.

The implication of such an unbelievably high density has been manifest in the present economic standing of the rural population, more precisely in the distribution of land holdings and the subsequent agricultural density. It is to this relationship between demography and social geography that we should turn our attention.

Economic Characteristics

It has already been established that the natural setting has rendered Bangladesh predominantly agrarian in her economy. The fact is once more documented in the labour force distribution pattern in the country. In 1961 when 94% of the population lived in the rural areas, 85% of the labour force depended on agricultural activities for their livelihood, the rate of labour participation being 35.27% and 34.44% for the urban and rural areas respectively.

Table 5.3 Labour Force and its Distribution
in 1961-1985
(in millions)

	1961	1975	1985
Agricultural labour force	14.87 (85.3%)		
Non-agricultural labour force	2.57 (14.7%)		
Total civilian labour force	17.44	26.43	34.05
Self-supporting {			
Dependents {			
Not in civilian labour force	14.60		
	18.79		
	33.39		

Source: Statistical Digest of Bangladesh (based on CSO information), Bangladesh Bureau of Statistics, Dacca, 1971.

There being no significant difference between the two rates of labour participation, the simple classification denotes the ^{overwhelming importance} (enormity) of agriculture as a mode of livelihood. But at once the classification conceals a number

of ambiguities.* For the purpose of understanding the chief economic characteristics of the entire population, the following classification, as presented by the 1961 census, is perhaps more meaningful:

Agricultural Labour Force	28.2%
Non-agricultural Labour Force	4.9%
Housewives	22.9%
Children, Dependents and Others	43.9%

While conventional labour force estimation is neither possible nor relevant in the context of current economic and social organization of Bangladesh, some discussion on the future prospects of the largest section of the population, i.e. agricultural community, is imperative. In view of the grim challenges of survival for 'today and tomorrow' there is hardly any reason to assume that the labour participation would fall dramatically in the foreseeable future. Although the high rate of births during the 60s will tend to push labour participation rate higher in the late 70s and early 80s, this will perhaps be offset by the

* There are a number of intricacies to be noted in this apparently simple concept of labour participation. The Central Statistical Office of Pakistan defined labour force to include non-institutional population of 12 years old or above who were found 'employed' or 'looking for employment' but of course excluding agricultural and other property owners and those engaged in 'immoral pursuits' including beggars. This group and a vast majority of women/girls doing household work only were lumped as 'self-supporting' and hence not included in the civilian labour force category. This conceals the relationship between the different components of the population. In Bangladesh where a great deal of work-sharing and disguised unemployment prevails, the aggregate category of 'self-supporting' is purely misleading. Further, even if the property owners may not work in the field, their sustenance comes from the field.

expanded free primary and secondary education programme of the government. Therefore, assuming a participation rate of say 35% we find that the agricultural labour force in 1975 and 1985 will be 24.78 million and 27.17 million respectively. This means in 1975 every agricultural worker will have 0.908 acre to work on; and the area per worker will dwindle to 0.828 acres in 1985. Following the participation rate we can assume that an average family of 5.6 would have roughly two workers to earn the livelihood. It follows therefore that in 1975 a family of 5.6 will have to make a living from a meagre 1.81 acres and that in 1985 a similar family's source of sustenance will be reduced to 1.65 acres. Available land for cultivation per family of 6 was 2.5 acres in 1960.

In view of the gloomy future what is most distressing is that more and more families are being pushed into below average holdings and quickly becoming landless. Although the percentage of families with big holdings is also decreasing, the distribution remains uneven. The following two tables will make the picture clear:

Table 5.4 Distribution of Families according to the size of their holdings

Size of Holdings	Land Revenue Commission of Bengal 1940	Famine Enquiry Commission of Bengal 1946	Dacca University Board of Socio-Econ. Survey 1956
Up to 2 acres	46.0%	50.0%	64.0%
2+ to 5 acres	28.6%	27.0%	26.0%
5+ to 10 acres	17.0%	15.5%	8.7%
10+ acres	8.4%	7.5%	1.3%

Source: Kalimuddin Ahmed, Agriculture in East Pakistan, Ahmed Publishing House, Dacca, 1965.

Table 5.5 Distribution of Holdings according to Family Sizes - 1960
(in thousands)

Size of Holdings (acres)	Total No. of families with Holdings	Size of the Families			
		1-2 Members	3-6 Members	7-10 Members	10+ Members
.5	802.63	135.59	539.89	115.52	11.63
.5 - 1	689.84	90.56	464.47	121.75	13.06
1 - 2.5	1677.41	146.58	1109.54	372.15	49.14
2.5 - 5	1615.02	71.53	927.06	513.23	103.20
5 - 7.5	698.45	15.59	305.73	278.94	98.19
7.5 - 12.5	442.36	5.30	134.01	185.74	117.31
12.5 +	113.77	2.11	39.74	74.96	96.96
Totals	6139.48	467.26	3520.44	1662.29	489.49

Source: Pakistan Census of Agriculture, Vol. 1, 1960.

Table 5.6 Distribution of Holdings and Cultivated Area according to size - 1960

Size of Holdings	% of Total No. of Holdings	Cumulative %	% total cultivated area	Cumulative %
Under 1 acre	24		3	
1 to under 2.5	27	51	13	16
2.5 to under 5.0	26	77	27	43
5.0 to under 7.5	12	89	20	63
7.5 to under 12.5	7	96	19	82
12.5 and above	4	100	18	100

Source: Pakistan Census of Agriculture, Vol. 1, 1960.

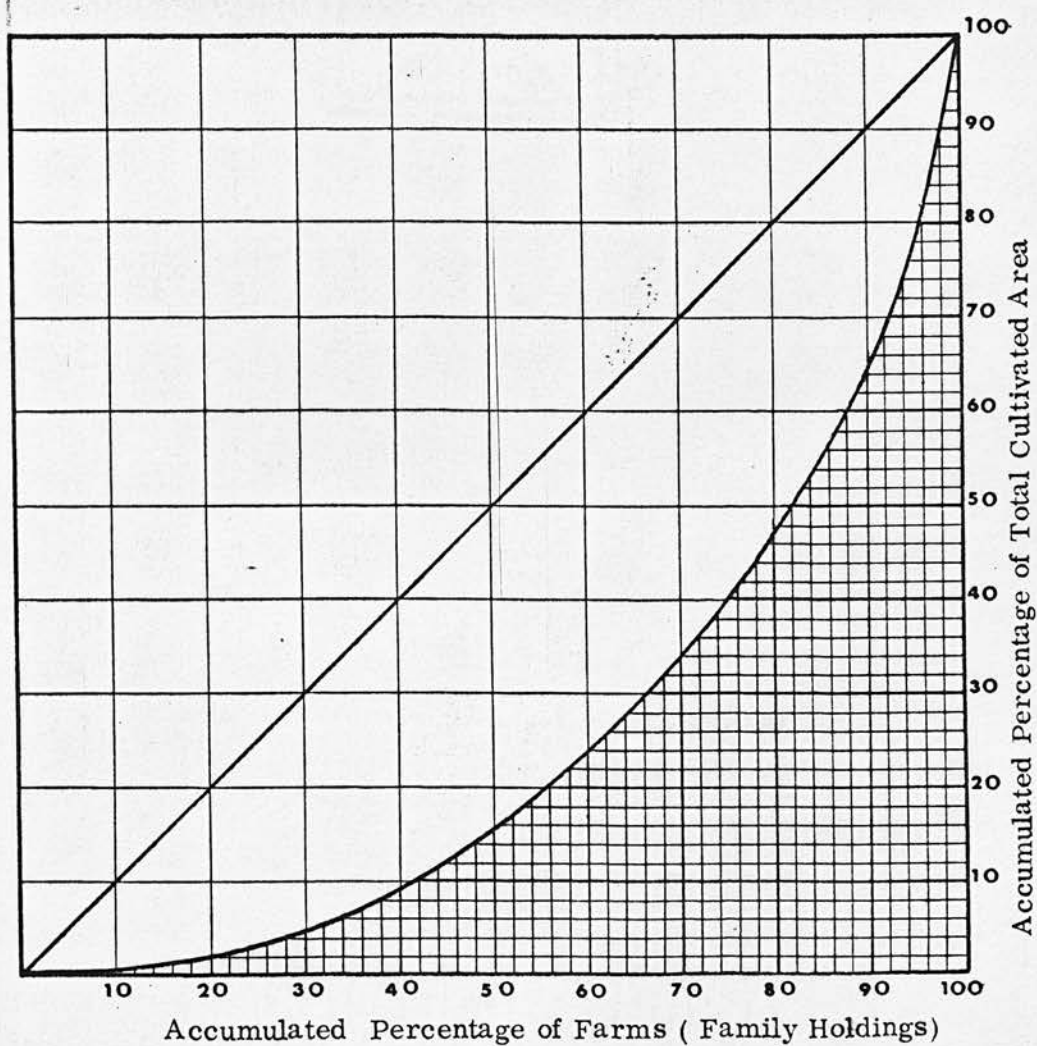


Fig. 5.3 Lorenz Curve of Distribution of Cultivated Area per Farm Family

The phenomena of ever-shrinking man-land ratio and the uneven distribution of land was very well documented in 1960 Agricultural Census as well as in the Population Census of 1961, when it came out clearly that 34% of the agricultural labour were owner-cultivators, 17% were landless and the remaining 49% were either owning/renting or owning/renting/ selling labour or owner/share cropping. It means that 83% were landowners of some sort. But of these, more than half had below average land holding, altogether cultivating only 16% of the total cultivated land. Of this below average group about 25% of the families have had only less than half an acre of land each. Again in the below average group about 67% of the families comprised of 3 to 6 members. What has happened during 1961-71 is anybody's guess. In absence of any up to date statistical information, nothing can be said in quantitative terms but that the situation has worsened is beyond any doubt. By now as much as 40% of the agricultural labour may be virtually landless.

Thus, demographic trends in conjunction with land availability make the future of Bangladesh look quite hopeless. Perhaps in the fear of such hopelessness the report on population planning in Bangladesh (sponsored by UN Relief Operation in Dacca) "has been suppressed",⁴ or shelved as a sacred document. This surely is a naive gesture - hopeless situations demand desperate manoeuvring, and certainly not withdrawal.

⁴ The Times, Friday, June 1, 1973, London.

Chapter 6

EXISTING SETTLEMENTS AND ENVIRONMENT

Gandhi often said of the Indian sub-continent, "The heart of India is in her villages". The statement is more pertinent to the situation in Bangladesh than any other part of the sub-continent. Bangladesh lives in her villages - more than 90% of the total population live in about 64 thousand villages of less than 200 families each (average according to 1961 census). This in conjunction with the density situation discussed previously, forms the basis of the settlement structure and environment in Bangladesh.

Settlement forms have been shaped by the most unrestrained interactions of man and nature. Under uninterrupted natural forces usually nucleated villages emerge - as is found in the Indian sub-continent; but in Bangladesh it has not always been the rule. Scattered island-like settlements or even single homesteads are found in the active delta region, while along the elevated banks of the rivers miles of practically uninterrupted agglomerations of dwellings also exist. Thus, nucleated villages, linear villages and dispersed hamlets have resulted from the interaction of micro-physiographic features and the mode of economic activity.

The greater part of the country being delta-plain, there are few natural elevations large enough for any sizable grouping of homesteads. Due to the scarcity of

sites above flood level, settlers have had to make elevations where they could house their families and livestock. These elevations vary in height from 3 or 4 feet to 14 or 15 feet, the earth being obtained by cutting a tank or digging irregular ponds, ditches or canals. Homesteads thus constructed on raised land may appear to form nucleations, but instead of being contiguous, are dispersed throughout the landscape. In fact the pattern is more like a dense stippling of small but separate nuclei rather than dispersed nucleations. Thus the dominant pattern of settlement is separate homesteads or small clusters of homesteads on natural or man-made platforms. Dwellings have also developed in closely set lines along the silt embankments (levees) or along the lines of communication, thus forming linear settlements.

Each such cluster of homesteads is called a para. Several paras or a large single agglomeration alone is designated as a Village. For the purpose of tax collection several villages were grouped together in a survey unit called Mouza. Thus a 'village' as surveyed and 'settled' (meaning settlement-recorded by the British administration) is primarily a revenue sub-unit representing an area of land. The boundaries of each village are delineated and settled by the Cadastral Survey (revenue survey) but no reference is made in terms of population size. Nevertheless, sociologically the village is the basic unit of human settlement and the corresponding socio-economic activities. Thus a village in Bangladesh

means agglomerations of homesteads along with a contiguous area of land delineated by a definite boundary, recorded in government documents. The boundary may or may not be physically distinct.

Within each village, identified by separate names, there may be several clusters of homesteads or Bari, as they are called. A bari in rural Bangladesh means a number of huts or other structures built around a courtyard and surrounded by trees - all contained on a high platform with or without a tank/pond, and all privately owned. The pond is in some parts of the country an almost universal feature and is everywhere very common. Since land on which to erect houses nearly always needs to be raised above flood level, a large pit or ditches are dug in any case to obtain earth. Besides, a pond is indispensable for the women to have their daily bath in relative privacy as well as for washing pots and pans, washing clothes, watering the animals and even for drinking water. An orchard, a few timber trees and a clump of indispensable bamboo is to be found in nearly all the homesteads all over the country except in the areas of new alluvial formations. Unlike an urban house (i.e. a masonry building containing several rooms and probably two floors under one roof) a rural homestead never consists of a single hut - even the poorest families always have a separate kitchen. The huts are mostly made of locally available materials, i.e. bamboo, thatch and/or C.I. sheets, and as such are never strong enough to hold an

upper storey. Masonry houses are few and far between as only the prosperous families would build larger and stronger huts and perhaps more of them. The homesteads do not display much variety in construction, material or arrangement; particularly in arrangement all classes conform to a common style.

Sofar as the internal structure of the village settlement is concerned, four components are most readily identifiable: a) homesteads, b) orchards and other vegetation, c) water bodies, and d) cropland. There is no information available on the national averages of land use quantification of these components. However, in a series of pilot studies on land use studies of parts of Dacca district conducted by the Geography Department of Dacca University, the following land use distribution pattern was revealed:

Table 6.1 Landuse Distribution Pattern in Three^{*}
Villages in Bangladesh
(Area in acres)

	Rampal		Ramsinha		Kalinjipara		Total of 3 villages	
	Area	%	Area	%	Area	%	Area	%
Homesteads	28.5	14.86	52.4	12.93	20.9	11.54	96.8	13.01
Water bodies	18.1	11.45	79.8	19.70	11.5	6.35	109.4	14.72
Grazing land	9.8	6.20	3.7	0.91	1.8	0.99	15.3	2.05
Horticulture	22.1	13.99	42.3	10.44	20.5	11.33	84.9	11.41
Other trees	20.2	12.78	13.5	3.33	6.7	3.70	40.4	5.43
Crop land	64.3	40.72	213.3	52.69	119.6	67.08	397.2	53.39

Source: Oriental Geographer, July, 1958, Vol. II, No. 2, pp. 107-121.
Huq, L., A Study in Land Use in Rampal, Ramsinha and Kalinjipara.

^{*} These villages happen to be in the highest density area of the country. Average density at the time of study was 3544 /

**LAND USE IN
JORADEUL**
(Rampal Union, Dacca)

100 ft 400 ft

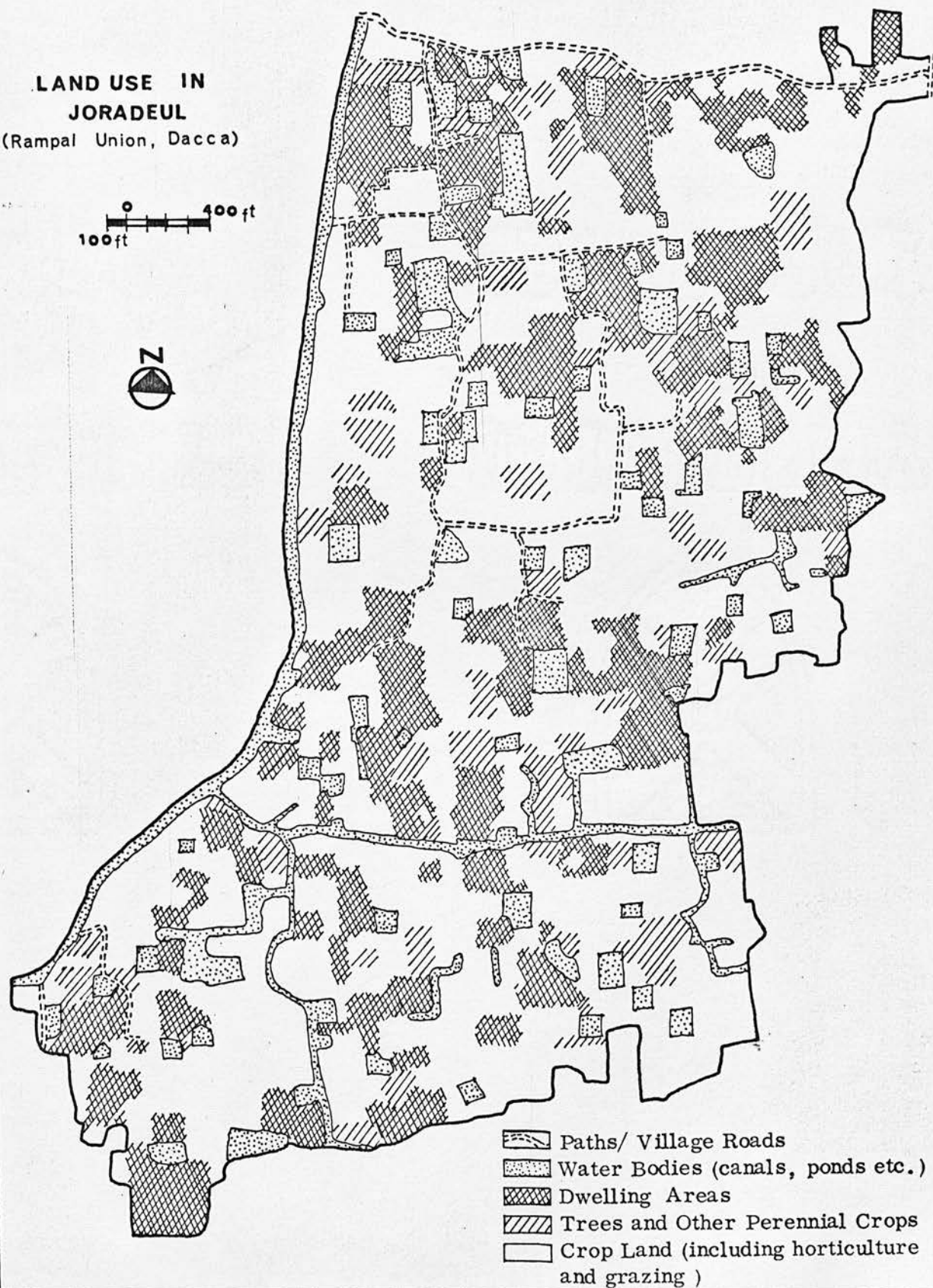


Fig. 6.1 Land Use Configuration in a Village
(source : Khan, F.R.; A Study in Landuse; Oriental Geographer; vol.1, no.2)

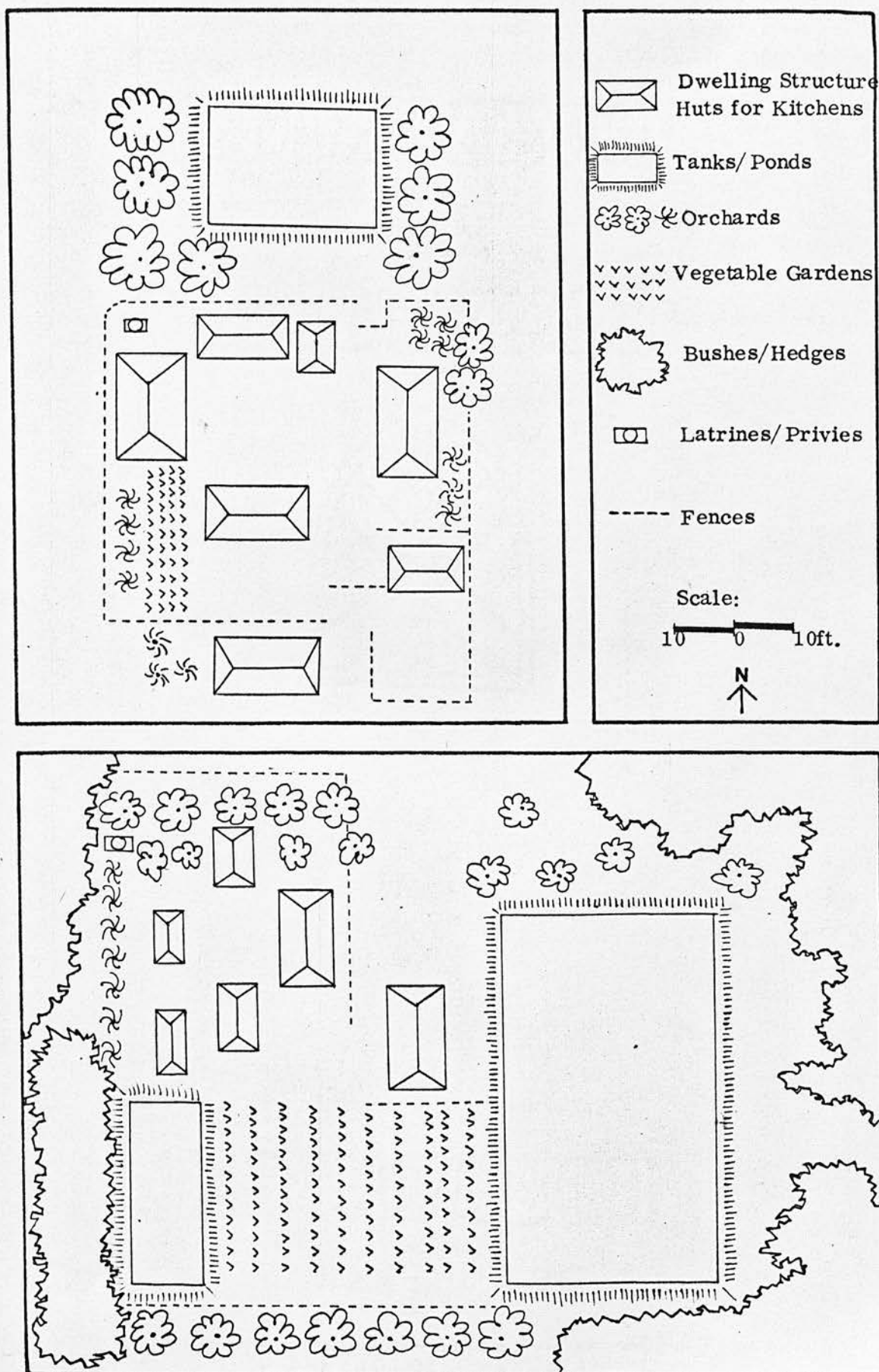
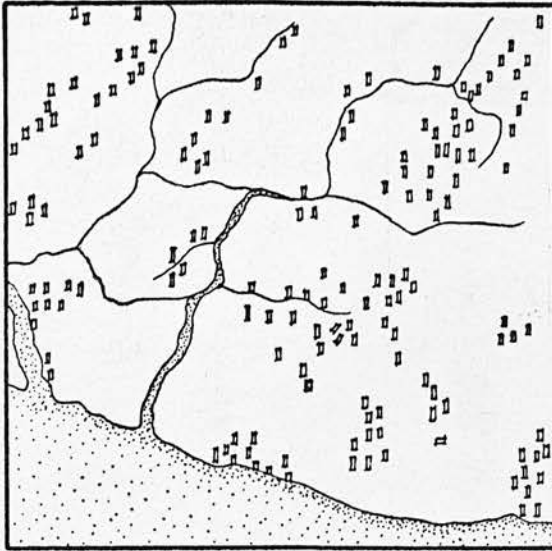
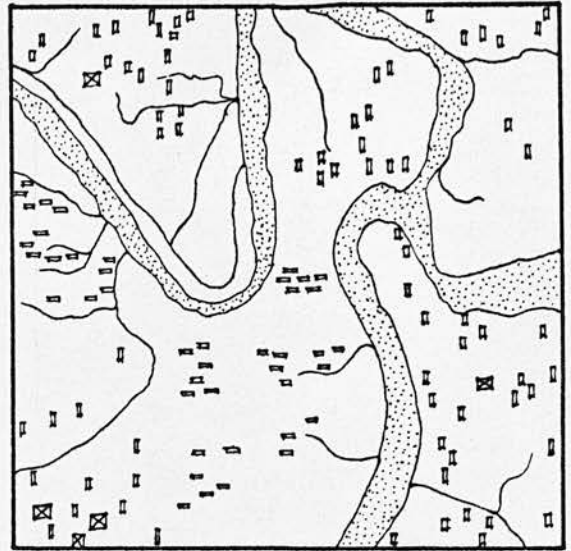


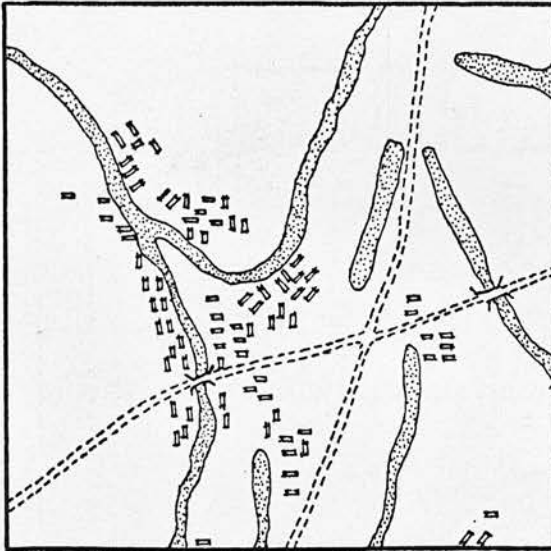
Fig. 6.1a Layout of Two Typical Rural Houses (Bari)



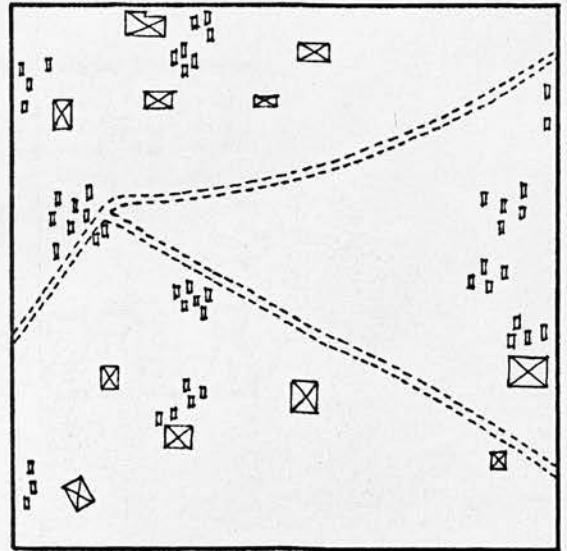
A. Dispersed Settlements in the partially inundated areas (Dacca).



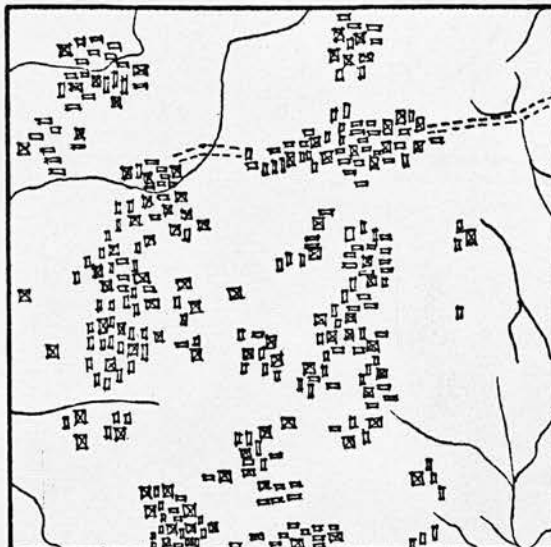
B. Dispersed Settlements in the fully inundated areas (Bakerganj).



C. Rudimentary nucleation of settlements on high grounds (Kushtia)



D. Scattered Settlements on the high grounds (Dinajpur-Rangpur)



◀ E. Settlements dispersed or in amorphous clusters (Comilla).

Sources: •Ahmed, N. The Patterns of Rural Settlements in East Pakistan; Geographical Review, July 1956, p395.
•Spate, O.H.K. & Learmonth A.T.A.; India & Pakistan, Methuen & Co Ltd., London, 1967, p580.

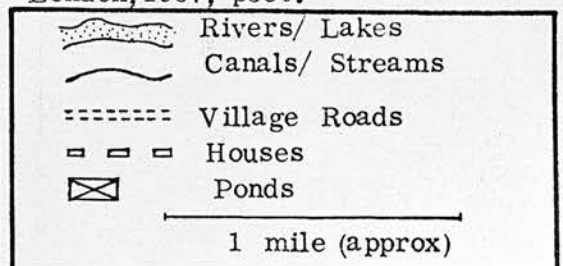


Fig.6. 1 b Examples of Settlement Patterns in Bangladesh

As the villages referred to above are situated in the high population density belt, the landuse distribution pattern obtained may be regarded as fairly representative of the core regions of Bangladesh. Homesteads along with tree areas and permanent water bodies account for a considerable percentage of total land. Grazing lands are in fact unimproved low wet lands waiting to be filled up by annual silting when these will be put under crops or used otherwise. So far as the lower density areas are concerned, the same components are most readily identifiable although their proportions may vary - for instance there may be less areas under homestead due to lower density, and more areas under crops.*

An examination of the graphic representation of the landuse distribution pattern further reveals that the settlement pattern is far from being compact (see Fig. 6.1). Landuse configuration is anarchic. Cropland is sub-divided sometimes into such small units (40 to 50 square feet)

(Footnote contd. from p. 138)

3544 persons per square mile, the highest being 5185 persons per square mile in Rampal. In response to high density, these villages have diversified their cropping into horticulture and as such land under horticulture in fact represent crop land, horticulture being cash crop in this case.

* Landuse studies carried out in less dense areas such as northern part of Dacca district and villages in Rayshahi District bear testimony to this statement. For details see: (i) Naqavi, S.H.H., Char Bahar: A Study in Rural Landuse, The Oriental Geographer, Vol. III, No. 1, Jan. 1957, p. 47; (ii) Rizvi, A.I.H. and Rizvi, N.; Barami: A Landuse Study of Sripur Terrace, The Oriental Geographer, Vol. III, No. 2 July 1959, pp. 33-46; (iii) Siddiqi, M.I., Land Utilization in Bholahat, Jadunagar and Gilhabari - The Oriental Geographer, Vol. VIII, No. 1, Jan. 1964, pp. 42-60, etc.

that ploughing is rendered impossible. Unusable patches of land abound in and around the homesteads.

The landuse configuration reveal in the studies cited above further testifies to Professor Nafis Ahmed's observation that compact collections of houses are unconventional.¹ As a matter of fact the same pattern of separated dwelling structures is repeated in siting the homestead units. Homestead units are separated from one another (unless very close relations) and one usually fenced by hedges or occasionally with bamboo mats or woven jute sticks. It is indeed a paradox that in a land-hungry country like Bangladesh, every bari (homestead) takes up more area than it would otherwise be necessary. What is more alarming is that the process is ongoing and the cumulative effect is frightening. As population grows, any room for the incremental population is being provided by encroaching either on the cropland or on the area under orchards and trees. In the process every parcel of high ground, natural or man-made, is being covered by homesteads alone and consequently no land is remaining for the cattle to graze or the children to play during the monsoon. Moreover new tanks are being dug to obtain earth for elevating buildable grounds. Land is being blocked out on two heads: by cutting one surface area and by raising another which finally is covered by a house.

¹ Ahmad, N., The Pattern of Rural Settlement in East Pakistan, Geographical Review, New York, Vol. 46, No. 3, 1956, p. 390.

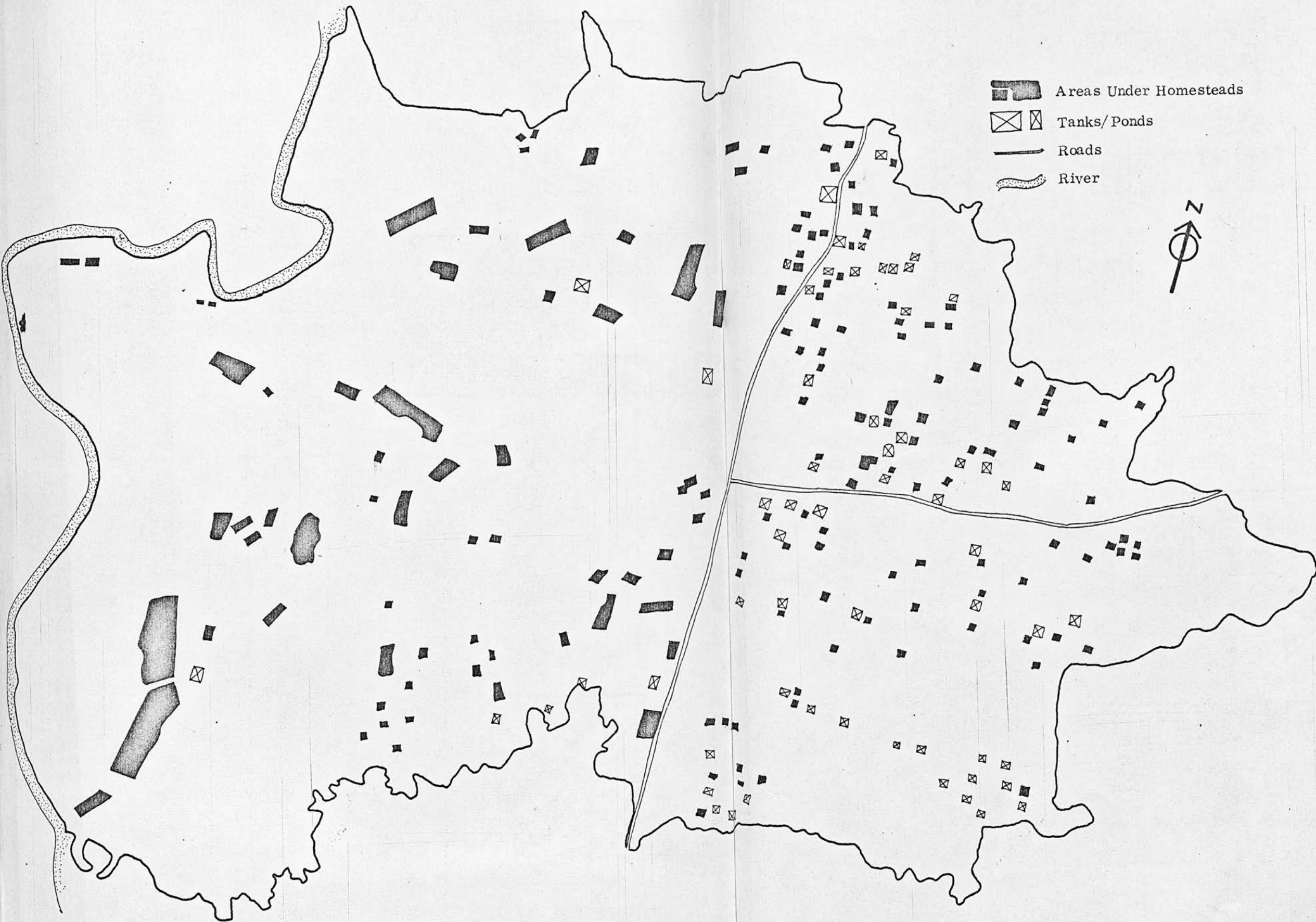


Fig. 6.2 Pattern of Land Coverage by Homesteads in Basan Union, Dacca in 1857

source : Office of the Assistant Town Planner, Urban Development Directorate,
Survey, Investigation & Planning of Rural Housing, Govt. of East Pakistan, 1968

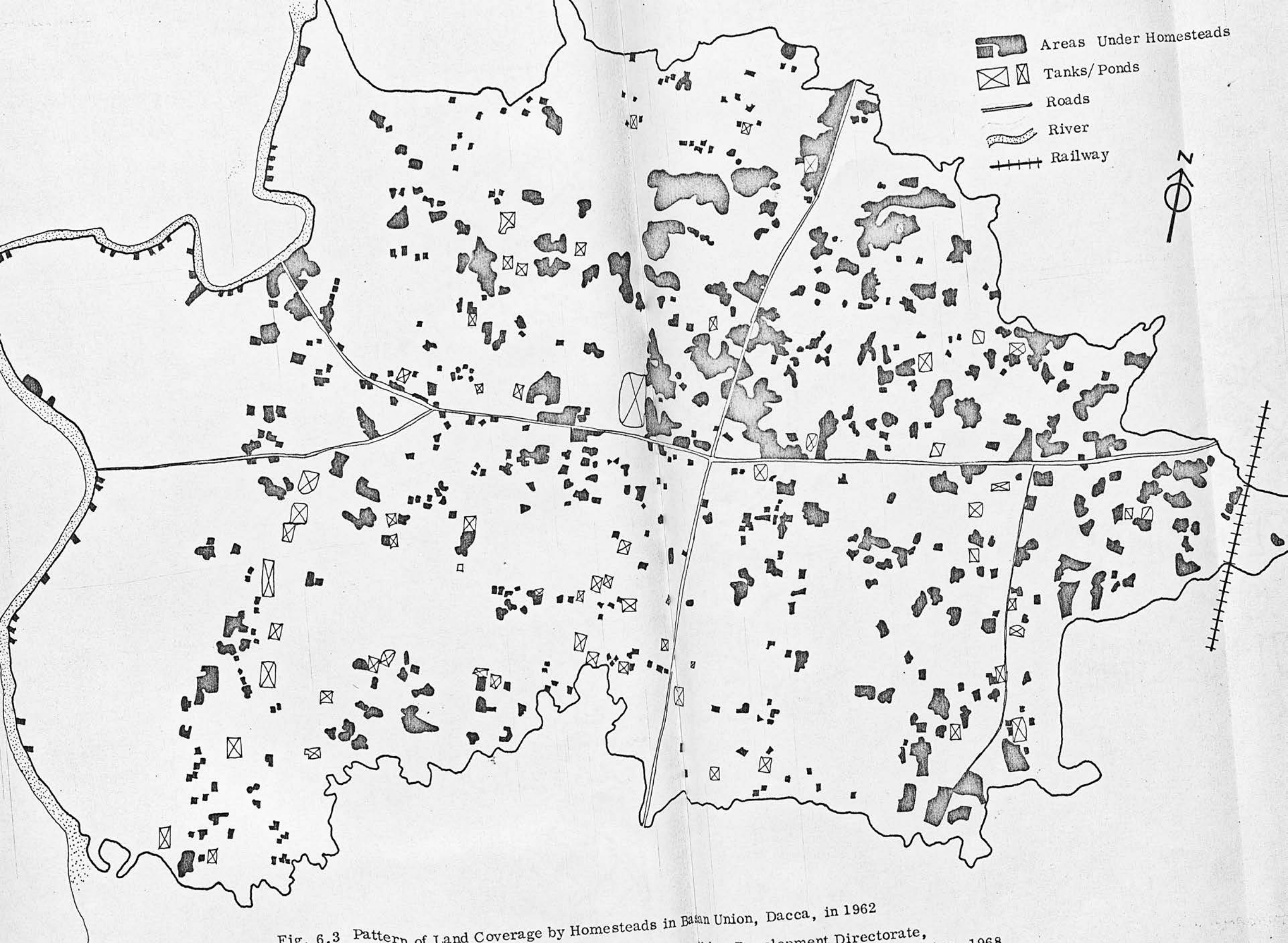


Fig. 6.3 Pattern of Land Coverage by Homesteads in Basan Union, Dacca, in 1962
 200
 of the Assistant Town Planner, Urban Development Directorate,
 Govt. of East Pakistan, 1968

There are no national statistics available on the rate of land coverage in the process mentioned. But sporadic studies covering two periods in time reveal a chilling picture (see Table 6.2 and Figs. 6.2 and 6.3). Table 6.2 shows that during 1899 and 1960 in one village the expansion of area under homesteads and tanks taken together has nearly corresponded to the increase in the number of families. In the same period the total area of the village increased to some extent which has considerably helped to offset the total loss of cultivable land. Otherwise there would be reduction of about 10% of total cultivable land in a span of sixty years. Nevertheless the situation in itself is frightful in view of the corresponding population increase on the face of static land productivity.

Table 6.2 Evolution in Landuse Distribution Pattern
in a Village in Bangladesh

	1899 (acres)	1960 (acres)	Increase or Decrease
Number of families	24	77	+ 220%
Area under homestead	3.3 (2.2%)	9.5 (6.1%)	+ 190%
Area under tanks	9.4 (6.3%)	14.0 (9.0%)	+ 49%
Cultivated area and pasture	136.1 (91.5%)	132.0 (84.9%)	- 3%
Total area	148.8 acres	155.5 acres	+ 4.5%

Source: Ahmed, K., Agriculture in East Pakistan,
Ahmed Brothers, Publishers, Dacca, 1964, p. 37.

The picture depicted in Table 6.2 may not be statistically representative of all the villages in the country but the trend is undeniable as reaffirmed by graphic representation of a similar situation in Figures 6.2 and 6.3 (unfortunately there is no quantitative information available to supplement the graphic information). It is also relevant to point out that the information at hand only tells a story of the past when population increased at a much slower rate in comparison with the present rate. What will happen in the next 25 to 30 years when population will definitely double appears to be a benumbing prospect. One cannot be too far wrong in suggesting that by the turn of the century as much as 50% of the total land may be covered by homesteads and tanks in the dense regions of Bangladesh if the present trend continues, meaning a fatal reduction in the size of the cropland, jeopardizing the food supply for millions. In numerical terms if we assume a modest 10% reduction in the cropland, as has been the case in the example (Table 6.2) during its population doubling period, there may be a food shortage for 15 million people if the present land productivity continues. Besides, what will happen to the trees and other vegetation areas so vitally needed for survival of man as a biological species remains an open question.

Turning back to the other aspects of the rural settlement pattern it is pertinent to point out that as new tanks and ditches are dug, the old ones become

derelict - full of water-hyacinth and other aquatic plants: a breeding ground for mosquitoes and for water-borne bacteria. These derelict water bodies together with the unnecessary bushes render the homestead environment very untidy and hazardous.

Nowhere in the villages would there be any village road for internal circulation. Occasionally a village may be fortunate in having a road passing by, but for internal use normally a footpath leads from house to house. These footpaths are narrow with uneven dirt surface and as such unfit for any vehicular traffic. Besides, during the rainy season, they either become submerged or muddy when movement on them becomes extremely difficult. In the deeply inundated areas no visible traces of paths remain and the water bodies, on becoming one continuous mass, provide the only means of communication.

Shops in the villages are conspicuously absent and are only found in the markets. Villages with their own markets are not very common - they are the exception rather than the rule. Even if there is a market in one populous village, it may not remain open for transaction for every day of the week or all day long. There is no village inn, nor halls or recreation rooms except perhaps in a particular village which may happen to be the Union Council headquarters, where there may be some meagre facilities such as a hut with a couple of chairs or benches and a table with some tattered newspapers! In some villages there may be a place of worship - a Mosque

for the Muslims or a Temple for the Hindus.

Perhaps due to the scatter^{ing}~~ation~~ of homestead clusters no single cluster or even single village could support a market centre by itself. It has already been mentioned that villages with their own market centres are exceptional. In the landuse configuration map market place as a component is conspicuously absent. However, in order to take care of the economic transactions of the rural population extra-jurisdictional exchange centres have grown. These centres are called Hat which are fixed-day markets only - one or two days of the week and the transaction hours are limited between mid-day and sunset. These hats serve as the central places for the exchange of goods and services, and as such they do not form part of the physical structure of the settlements. But, unlike the 'central places' of European or American space structure,

"there appears to be little or no correlation between these hats and the size of their neighbouring settlements."²

In most cases the hats are located away from the settlement clusters and in open clearings alongside a line of communication, often at the cross-roads of such lines. Most of the hats would have temporary thatch sheds, perhaps tin sheds, but trading in the open or under improvised sheds is not uncommon. Only the largest ones

² Patel, A.M.; Rural Markets of Rajshahi District, Oriental Geographer, Vol. VII, No. 2, July 1963, University of Dacca, Dacca, p. 146.

strategically located are found to have some permanent brick-built or otherwise strong structures for storing the commodities bought by big dealers from petty sellers, and relatively permanent tin sheds for the transaction of hat-day business. In any case there are no paved roads, not even paved spaces for the trading of commodities.

A hierarchy is noticeable in the functions performed by the hats: (a) the largest ones are the collecting centres for agricultural products from the surrounding region and at the same time distributing centres for industrial goods such as cloth, kerosine, salt, edible oil, cigarettes, shoes or sandals and the like. These first order centres also provide some services such as those of the tailors, barbers, cobblers, blacksmiths, indigenous medicine men or even doctors; (b) the medium-sized ones are the intermediate collection points of locally grown agricultural products where transaction of daily food items is also very heavy; (c) the third order of hats are the primary centres for transaction in food items only, where the buyers and the sellers are usually from the same locality.

So far as the distribution and spacing of the three orders of hats is concerned, Mr. Patel's survey results are quite revealing:

"The spacing between the hats is irregular and does not conform to the spatial pattern of trade centers in Europe and America as described by Christaller, Dickinson and Brush."³

³ Patel, A.M., op. cit., p. 151.

Mr. Patel also points out that the siting of the larger ones are more conditioned by transport route and population density as well as surplus of one commodity and/or deficit in another. Where these factors are favourable the first order hats may be spaced by 5-10 miles,⁴ but with lower densities the distances in between may increase to 10-15 miles or perhaps even more. The intermediate collecting centres are more numerous and are away from the higher order centres with no definite pattern of distance relationship. However, the spacing between the second order centres ranges from 4-8 miles. An average distance of 2-4 miles between the small hats is fairly common.

Although a distance of 2-4 miles may appear quite far for the primary transaction, to an average villager in Bangladesh it is considered a walking/boating distance. The primary hats may be quite frequent in denser parts of the country and every village may have access to a number within a radius of four miles such that in rotation a villager may have a chance of buying and selling food items every day in one hat or the other. What matters crucially is the access to first order collection and distribution points. This is likely to be difficult particularly in view of the inadequacies of the communication network and the mode of transport - a slow moving boat or a bullock cart in the face of all climatic odds. Under the circumstances the intervening role of the

⁴ Ibid., p. 149.

middle-man becomes unavoidable, and the deprivation of the primary producers follows on two heads: first as a producer of agricultural commodities and second as a consumer of simple industrial goods. In this connection Professor Ahmad maintains that

"three-quarters of the marketable jute is sold by the growers at their own doors, while one-fifth is sold by them in the primary markets or hats."⁵

One aspect of the situation which needs to be emphasized is that although a hat is not found to be an integral component of the space structure of the village, it is the only physical institution for the economic transactions of the rural population. Not only that, these hats are the venues for social intercourse as well - disputes between neighbours are canvassed and discussed, reconciliations attempted, news dissipated and messages relayed. Obviously the hats are an indispensable component of the rural life and environment. It is a pity that the fate of such an important institution should remain beyond the jurisdiction of public control.*

⁵ Ahmad, N., Economic Geography of East Pakistan, Oxford University Press, London, 1968, p. 251.

* Management and toll collection rights are given to the highest bidder in an open or negotiated bidding with the Government Department concerned. The bidder gives the bid money in advance to the Government and keeps all the proceeds by himself. There is no control over the rate that the bidder exacts from the traders.

The Urban Settlements

The standards by which settlements have been qualified as urban have been provided by the Census Organization according to which all municipalities and town committees, civil lines, cantonments and any continuous collection of houses inhabited by not less than 5000 persons are to be treated as urban areas. In addition such places are to be included in the urban category as (i) centres of trade and commerce with a population mainly non-agricultural, (ii) centres of population with a markedly high rate of literacy, and (iii) concentration of population in continuous collection of houses where the community sense is well developed and the community maintains public utilities such as roads, lights, water supply and sanitation. According to this definition there were 64 towns or urban units in 1951 and in 1961 the total figure came to 78, accounting for 4.4% and 5.2% of the total population respectively. It must be noted here that the increments in the Urban Units were not new settlements - formerly they were classified as rural but as a result of population increments these agglomerations were upgraded as urban. Thus the increase in the number of urban agglomerations as well as the proportion of population living therein indicate a slow but steady process of urban build-up in Bangladesh.

According to the numerical criterion Bangladesh has had a long heritage of urban settlements. It is said that some time in the 16th century there were more than

one million people in Dacca when it was the capital of Bengal and a garrison of the Moghul army. Up to 1947 the region that now forms Bangladesh was a raw material supplier to the Calcutta market; there was hardly any industrial activity in the region. Urban-industrial investment depended on the desire and convenience of the foreign investors rather than on intrinsic geographical and related forces. Thus the basis of urban settlements and their growth has not been associated with the process of industrialization. In most cases the surviving urban settlements today were initiated as administrative centres for the purpose of revenue collection and general maintenance of law and order. Superimposed as these centres were, many even today appear like semi-urban islands in the vast rural surroundings. Many of them are still only consuming centres and are feudal in their character. However, some urban centres did grow in response to inland transport and commerce.

With the launching of the First Five-year Plan (1955-60) under the Government of Pakistan the track for industrial activity was laid. The Second Five-year Plan (1960-65) nearly tripled the industrial investment over the levels of the First Plan. This commitment of the Government to industrial development of the country simultaneously committed it to a process of urbanization very typical of its own. Due to the uneven distribution of roads and other infra-structure, new mills and factories clustered around only a few centres where

better infra-structure was already available. The direction of industrial location that followed was of increasing concentration in two or three urban centres, namely Dacca-Narayanganj, Chittagong and Khulna. What is more important to note is that the bigger industries were located in the two major cities. Apparently this principle of concentration, as dictated by the theory of deliberate regional "imbalance" (Albert Hirschman) and/or "growth pole" (John Friedmann), was spelled out in the Second Plan.⁶ Consequently, remarkable growth has been taking place in those three centres primarily than in others. Khulna topped the rate of growth with an increase of 203% in the period 1951-61. Doubtless, this colossal explosion of the city has been contingent upon government policy which was followed by private decisions of locating industrial activities. Similar explosion took place in the city of Narayanganj also. Although the city of Chittagong within its municipal boundary did not experience any dramatic growth during the period, the adjacent areas of the city were fast becoming urbanized.

In spite of the explosion in few urban centres the overall pattern cannot be identified as a phenomenon of

⁶ Of the 119 private sector industrial projects sanctioned for the Second Five-year Plan period, 35 were to be located in Greater Dacca, an equal number to be established in Chittagong and the remaining 49 to be distributed in the other 15 districts. Cf. Eddison, John C., Industrial Growth and Urban Land Requirements, The Pakistan Development Review, Vol. III, No. 4, Winter 1963, p. 552.

urban primacy* perhaps the reason is to be found in the enormity of the size of the total population. In 1951, there were only two cities with a population of 100,000 or more, namely Dacca and Chittagong. In 1961 the number of cities having a population of 100,000 or more increased to four. The size distribution of urban centres are shown in Table 6.3.

Although there was no dramatic change in the total number of cities during 1951-61, there had been considerable mobility in the rank of individual urban centres. During the period at least 12 towns moved up the scale, others maintained their status quo in terms of ranks, some of course declined either absolutely or relatively mainly due to the shift in trade and communication routes and the re-arrangement of spatial economic structure which followed the partition of Bengal in 1947. In respect of growth and decline, a wide variety was observed:

"Cities of different rank and sizes have experienced growth and in fact no correlation can be drawn between city-size and growth."⁷

At any rate, the number of fast growing areas remained very limited. Up to 1961 about 45% of the total urban

* Even in the latest studies the phenomenon of 'primate city' is not identifiable. By applying Barry's principle of urban size relationship Dr. K.M. Elahi found that the towns of Bangladesh are neither primate nor log-normal. He maintains that this is a stage between primacy and log-normality - see Elahi, K.M., Urbanization in Bangladesh, The Oriental Geographer, Vol. XVI, No. 1, Jan. 1972, p. 14.

⁷ Unpublished M.C.P. Thesis by the author: Study of Areas and Development Strategy for Regional Planning in East Pakistan, M.I.T., May, 1965, Cambridge, Mass., U.S.A., p. 59.

Table 6.3

Urban Centres by Population Size	% of Total Population		% of Total Urban Population		Total No. of Urban Centres	
	1951	1961	1951	1961	1951	1961
I. 100,000 +	1.49	2.38	34.39	45.86	2	4
II. 50,000 - 99,999	0.52	0.58	12.02	11.18	3	5
III. 25,000 - 49,999	1.18	1.07	27.14	20.60	15	15
IV. 10,000 - 24,999	0.78	0.76	17.88	14.58	21	23
V. 5,000 - 9,000	0.37	0.40	8.56	7.78	23	31
					64	78

Source: Census of Pakistan, 1961, Vol. 2, East Pakistan Population.

population lived in the four big cities of more than 100,000 population. The number of people living in the middle-sized cities (50,000 to 99,000) were relatively small, but the number of people and the proportion of total urban population living in the townships of less than 50,000 people were quite significant.

By 1961 urbanization in the country had just started with some elements of industrial economy at the base, and the growth was already eccentric - only few centres experienced accelerated growth. These few centres, in addition to their previous functions, became the prime generators of the country's infant urban economy. The magnitude of growth in these centres certainly reversed the overall impression of slow rate of urbanization. Although the percentage of population moving to the urban place was still not phenomenally alarming, the absolute number of urban immigrants and the tempo of their turn up was high enough to cause explosion in those selected urban settlements. In the 60s the residents of Dacca-Narayanganj, Chittagong and Khulna inescapably experienced this explosion. In absence of any statistical evidence, the popular observation remains the only basis of any tentative statement.

The Third Five-year Plan was believed to usher in a new level of industrial and hence urban growth in the country. The Third Plan (1965-70) included provision of large scale expansion of industry. This, together with the growth in trade, commerce and administration may be

assumed to have given rise to more rapid urban growth. In the preceding chapter we have estimated that by 1971 urban population might have reached to 5.5 million signifying an increase of 112% over the figures of 1961. Assuming that the earlier trends continued as a result of continued strategy of growth-pole, urban expansion cannot be visualised to have extended beyond the limits of earlier geographic concentration. That means Dacca-Narayanganj, Khulna and Chittagong must have been flooded by now with urban immigrants and their dependents, and the problems of urban environment must have multiplied to an immeasurable magnitude. Incidentally the resident experience in those cities fully coincides with the above conjectures.

On the basis of functions performed, both ascribed and achieved, a rough classification of the urban places is feasible though on Western conventional standards many of them may not even qualify to be called urban at all. Primarily based on the origin, the following types are more or less identifiable:

a) Administrative centres: Most of the existing urban settlements owe their origin to administrative functions rather than economic activity. They were mostly initiated as superimposed administrative centres mainly concerned with the collection of revenues and taxes, regulating land holdings as well as trying petty civil and criminal cases. Some of them happen to be historical seats of revenue administration, others are

Table 6.4 Rapidly Growing and Declining
Urban Settlements

	Population 1951	Population 1961	% Increase or Decrease
Dacca City	338,762	556,712	+ 64
Narayanganj City	72,517	162,054	+ 123
Chittagong City	294,046(?)	364,205	+ 24
Khulna City	42,225	127,970	+ 203
Jessore Municipality and Cantonment	24,146	46,366	+ 92
Bhairab Bazar Municipality	12,040	31,749	+ 164
Lalmouirhat Town	9,170	22,001	+ 140
Naogaon Town	11,287	20,276	+ 80
Bagerhat Municipality	7,431	16,398	+ 121
Feni Municipality	4,951	9,817	+ 98
Nilphamari Town	5,413	9,757	+ 80
Jhenaidah Town	4,570	9,055	+ 98
Barisal Municipality	89,964	69,936	- 22
Parbatipur Town	32,876	27,118	- 17
Bajitpur	13,111	12,097	- 8
Thakurgaon Town	10,049	7,039	- 30
Debhatta Municipality	5,738	4,042	- 30

Source: Unpublished M.C.P. Thesis of the author,
op. cit., ~~1961~~

Note: Only those centres were identified as rapidly growing centres which had shown an increase of over 45%, which was the average rate of growth of urban population during 1951-61. However, the city of Chittagong is shown to have experienced a lower rate of growth; but the figures for 1951 were taken from an undocumented source since no figures were provided by the Census. Observers who lived in Chittagong during that decade certify that the city must have gone through a growth rate much higher than 24%. According to some sources Chittagong had a population of 53,000 at the time of partition of 1947.

associated with recent (British) spatial arrangement of regional administration. In course of time many of them have acquired additional functions of trade and commerce and/or education. About two-thirds of all urban places are administrative centres and administration still remains the greatest role in those places.

b) Regional/sub-regional trade centres: The origin of this class of town lies in the transaction of local or sub-regional trade and commerce. It is conceivable that these centres first started as local hats (rural markets) in their early days and gradually developed into semi-urban collecting centres for the local and sub-regional produce and distribution centres for the same catchment area. In fact these are overgrown village markets. In course of time some have achieved regional importance having been assigned with administrative functions. Others have grown into regional trade centres with the growth of the jute trade, the only cash crop of the country involving large volume of transaction. In their character and physical make-up these centres, even the ones with regional status, are fairly rural. Most of them enjoy juxtaposition of transport and communication channels with nearly inevitable river front. They are more integrated functionally to their surrounding rural hinterland than to the big cities of national importance. Bhairab Bazar, Chandpur, Narsingdi, Jamalpur, Munshiganj, Rajbari, Bagerhat, Habiganj, Gaibandha, Kurigram are some of them.

c) Communication centres: Several towns have grown only in response to lines of communication and transport, particularly rail transport laid by the British. Most frequently they are still primarily important for communication purposes having been located at the nexus of rail transport, i.e. railway junctions and/or break-of-bulk point, i.e. connecting points between rail and water or rail and road transport or between two truncated rail routes. Some of these towns have acquired additional roles of trade and commerce and/or administration. Parbatipur, Saidpur, Lalmonirhat, Saidpur, Sirayganj, Shantahar, Ishundi, etc., fall under this category.

d) Industrial centres: There is hardly any urban settlement of considerable size which owes its origin to only industrial activity. Although mills and factories have added to the growth and prosperity of many towns, purely industrial activity is characteristic of only a very few settlements like Setabganj, Dorshana, Chandra-ghona, Fenchuganj and Chnatok, and these settlements are so small that they are only an apology for a town. These are settlements around one or two mills or factories. In fact the only urban places where some semblance of urbanity in terms of hums of industrial activity, transport and the associated crowd and traffic are to be found are Dacca-Narayanganj, Khulna and Chittagong. Nevertheless, these four cities perform a combination of other functions as well; obviously it is the combination which has given them the towering importance.

In resume, it is necessary to point out that nature's role in shaping the built environment is as distinct in the urban settlements as it is in the rural settlements in Bangladesh. The distribution of the urban settlements is obviously random. Spacing of the existing urban places has resulted from the interplay of natural economic and geographical forces. Forests most naturally have precluded urban locations. Similarly the old alluvium track, where choice of communication has been limited to land routes only, have failed to give birth to any urban centre of any sort. Low-lying areas subject to heavy annual flooding have discouraged urban build up which would incur incredible expenditure and/or herculean labour for earth raising for structures, roads and embankments. Urban agglomerations have not come about in response to high population pressure - apparently, the low-lying areas, in spite of their high population densities, do not contain the largest number of towns; in fact, the contrary (Fig. 6.4).

Notwithstanding the rules of rank-size order of settlements, the unique forces operating in Bangladesh have resulted in the absence of any definite pattern of hierarchy in the urban settlements - "ten leading urban centres do not conform to the rank-size rule".⁸ Thus on several counts the system of urban settlements is loosely structured, if at all, and largely unintegrated in the

⁸ Patel, A.M., The Urban Centres of East Pakistan, The Oriental Geographer, Vol. XIV, No. 2, July 1970, p. 10.

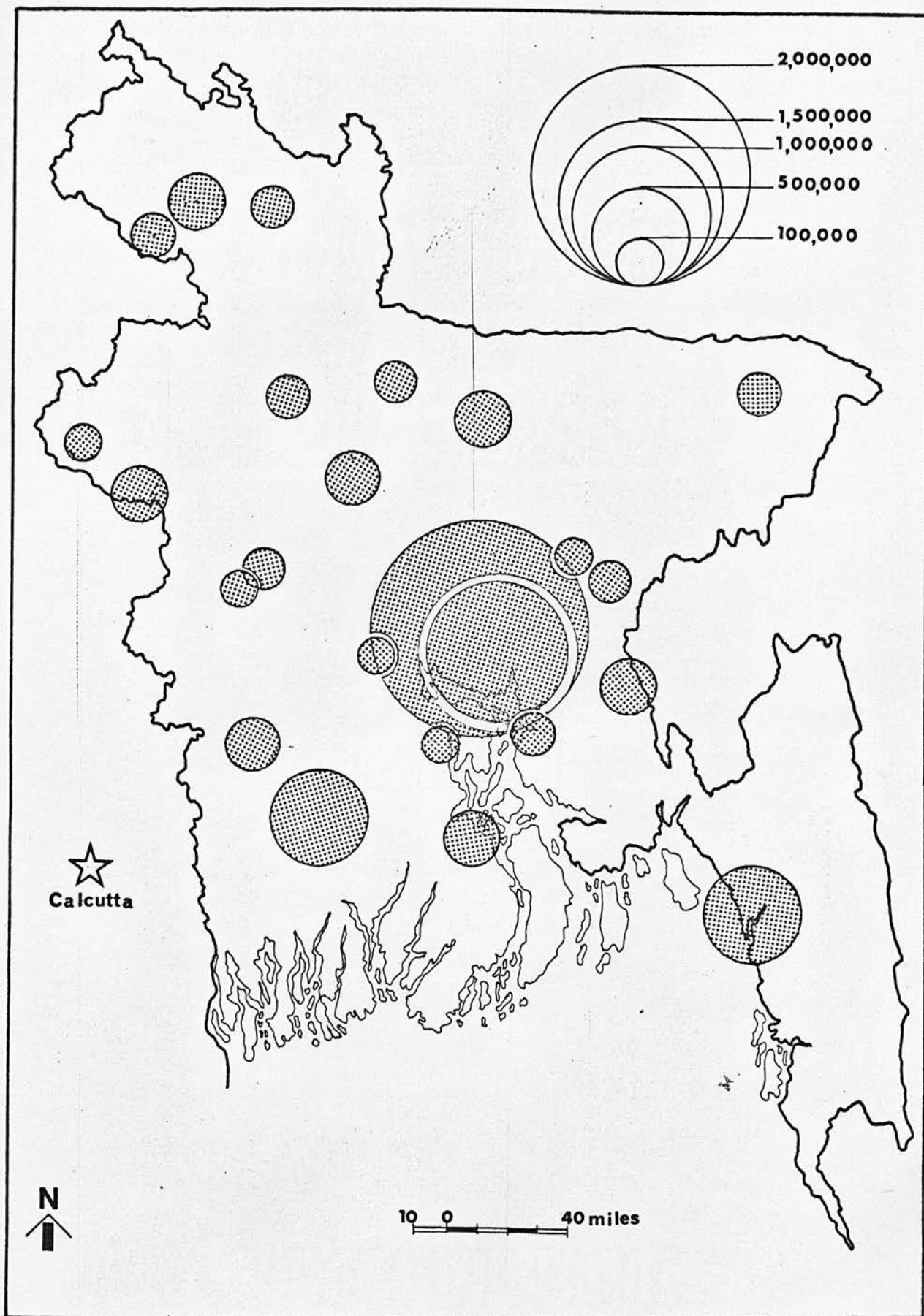


Fig 6.4 Recent History of Urban Growth and their Locations

space-economy. It has already been pointed out that the lower order towns which are in fact overgrown village market places are more akin to their rural surroundings than the big urban centres, and as such they have very little to offer their hinterland. Even the big cities, which are marching towards metropolitan status, are terribly circumscribed in the expansion of their service areas.

"Concentration of newspaper circulation, television audiences, government and other specialized professional services, public health facilities makes the boundary of city service area extremely limited. Physical amenities like electricity, piped water, sewerline, asphalt roads and telephones end at the municipal boundary line....On the other hand, the thread of interdependency is nebulous - fruits, vegetables, fish and milk come to the cities from far and wide places....There are quite a number of areas considerably close to the city yet not at all oriented towards the urban economy, simply because of non-accessibility. Seasonal character of transportation ease, rigidity of public transport all add up to circumscribe the expansion of urban influence"⁹ (Fig. 6.5).

Under the circumstances, the contributions of even the big cities to the rural surrounding are conceivably at a very low level.

Finally, a note on the physiognomy of the urban places. Shabby, disorderly and uncouth look characterizes all the urban places regardless of their sizes. This has come about due to a number of reasons: physical, economic, administrative and political. Physiographically even at

⁹ Author's M.C.P. Thesis, op. cit., pp. 69-70. Under the most generous allowances it was found that the areas of urban influence did not cover a full radius of 25 miles of Dacca; usually area of influence followed the transport corridor only.

the microlevel every urban place suffers from the inevitable presence of large or small water bodies, drainage channels, depressions, natural or man-made. Due to the limited financial resources of the developers, both private and public, only the readily buildable areas are selected leaving the 'difficult' areas lying in and around. This results in the formless, shapeless character of the urban settlements and their unnecessary sprawl - a suicidal trend for land-hungry Bangladesh. Again, due to low financial capacity of individual residents commensurate with their preceding rural life styles and values, even the biggest cities, like Dacca-Narayanganj, Chittagong and Khulna, have large numbers of rural type houses and layouts. The phenomenon is encouraged by the absence of building codes or planning design standards. Physical structure of the urban settlements is largely determined by the local availability of building materials as well. For instance, there is a noticeable difference in the physical character of the urban areas in the southern part of the country than those in the north:

"Because of the relative absence of indigenous building material, i.e. bamboo, wood poles and thatch, the urban areas in the north which are not growing very fast, have more brick-built structures than in the south. On the other hand, Khulna, which has the highest rate of growth, was found to have the poorest housing score in the country. Due to the abundant supply of indigenous building material from the nearby Sundarban, large number of rural type housing are found right in the city."¹⁰

¹⁰ Author's M.C.P. Thesis, op. cit., p. 69.

As a result, density of structural units is too high. Much more areas are taken up for dwelling purposes than it would otherwise be necessary in a conventional standard. Even the planned areas have been allowed luxury size plots for single houses. The process is continuing. Particularly the four big cities, where the pressure is high, are sprawling at an alarming rate - according to Western standards they are covering much more areas in relation to their population size. In land-hungry country, urban sprawl is fatally encroaching upon more and more agricultural land. Agricultural land is being eaten up by expanding brick-fields and other earth excavations in order to fill in the depressed pockets inside the city areas. Urban sprawl is rendering more and more areas unserviceable - because of the increasing sprawl the public authorities find the 'additional cost' (meaning additional to normal costs) impossible to overcome. Consequently urban miseries are heightening at an exponential rate. The services and infra-structure threshold has long been crossed in the big cities, and now it is a story of expanding deficits. The political choice of growth poles strategy of urban development has obviously added fuel to the fire. Although a substantial number of second order urban places offer considerable advantages to sustain selected industrial complexes of the 'foot-loose' type, only three urban locations have been chosen to be "stuffed". About three-quarters of the industrial investments in the Second Plan were spent in those areas.

The results are obvious - extremely inadequate services like transport, electricity, water, sewer and central shopping, vanishing usable open spaces and playgrounds, increasing cost of intra-city movement in terms of time and money, decreasing security services, declining cleaning services, etc., etc. These evils have been paralleled by land speculation and sky-rocketing urban land value.

In view of the peculiarities of the urban settlements, what is crucially important to bear in mind is that (i) if the present trend is allowed to continue, the future consequences will be disastrous. If the present urban man-land ratio is not curtailed and the current sprawl not stopped, the survival of the big cities themselves would be threatened; (ii) if the cities and towns and their rural surrounding are not brought more in line of mutual benefit through functional integration and expanding area of influence, the urban places will have no insurance to survive or alternatively they will be strangulated by their own problems. These two fundamental issues will be analysed in the larger context in a later chapter.

Chapter 7

PREVAILING HUMAN AND SOCIAL OBJECTIVES

Bangladesh is the outcome of a militant Bangalee nationalism. On the surface the midwife of the incipient nationalism happens to be the Awami League, but the popular mind was impregnated silently with the resentment against exploitation, deprivation, social injustice and coercion. The process is not of recent origin as one might suspect - the anguish has been accumulating for centuries and perhaps millennia against exploitation and deprivation both from within and without. The agonizing mind of the oppressed had always been looking for an egalitarian salvation as is reflected in the words of the great poet, Tagore:

"They know not to whose door they will turn for
justice;
Calling on the God of the poor, for once,
In their heaving sighs, silently they die."

The search for social equanimity is inherently Bangalee. The environmental features have had tremendous bearing on the evolutionary make-up of the Bangalee mind. The mighty flow of the vast river mouths mingling with the 'infinite' oceans, the expanse of the delta and its morphology of breaking and building - all have conjured up a unique subjective aspect in Bangalee life and thinking, the cornerstone of which is an innate sense of joy in being free and seeing things free. But this sense of freedom is meant to be a collective freedom, the freedom like that of the mass of onrushing

waters with its own vitality, velocity and direction. Such environmental factors moulded a collective consciousness which played host for the flowering of Buddhism, Bangalee-Islamic mysticism and Vaishnavism in the past.

History tells us that Brahminism with its rigid caste system spreading into Bengal from the upper Ganges plain could never create a strong appeal in the eastern part of the delta. Whereas the same area, the kingdom of Samatata to the east of Meghna river, was in the pre-Muslim period a strongly Buddhist area.¹ The quest for social unanimity was answered by Buddhism which taught the values of magnanimity and freedom from selfish desire in contradistinction to extreme ego-centrism or existentialism. The message from Buddha that individual existence can only be realized through the exercise of kindness, piety and honesty and thereby the self can be elevated to the ultimate end, Nirvana, the perfect blessedness, found a ready response in the soils of the delta - Buddhism flourished. But then followed a period of repression during the early part of our millennium.

The egalitarian aspirations of the mass mind was once again reflected in its large scale acceptance of Islam which came with a promise of equality and brotherhood. But the promises remained a mirage at the popular level, instead an aristocratic super structure was

¹ Ling, Trevor; Creating a New State: the Bengalis of Bangladesh, South Asian Review, Vol. 5, No. 3, April 1972, p. 225.

imposed by the Muslim conquerors - class distinctions reinforced. Nevertheless, Muslim mysticism which proclaimed: "Do what you will so that you do not seek to harm your fellowmen, for in my Holy law there is no other sin but this," could not perhaps find a more fertile ground in the Indian sub-continent than the soils of Bengal - there followed a blooming of Baul poets (mystic poets) and Kabiyaals (singing folk poets), championing the cause of the groaning popular mind.

But in real life powerlessness of the mass and their dependence on authority continued for centuries after centuries and made them askance on all efforts. God the Almighty remained the only source of succour in times of need and stress, and hence the invariable fatalism. The 'rational government' transplanted by the British was looked upon by the masses with indifference and apathy. To them it was just another non-sympathetic agency at the top which had enough material resources but no mass concern. But the sleeping egalitarian aspirations surfaced again and again whenever there was the slightest scope.

When modern politics emerged on the scene, the masses gathered around the political parties whichever had shown some plebeian concern. The election victory of the Krishak-Praja Party (Peasant-People's Party) in 1939 by A.K. Fazlul Huq, and that of the United Front in 1954 and recently the landslide victory of the Awami League in 1970 - the only free elections in the last four decades, bear

testimony to the fact that the masses are ever responsive to egalitarian promises. As a matter of fact all these election victories were won with manifestoes heavily loaded with commitments for mass upliftment. Even the highly elitist Muslim League movement for Pakistan gained popular grounds in Bengal only after it had annexed a slogan on economic reform in favour of the Muslim masses. It is doubtful whether the Muslim League would be at all successful in achieving its goal in 1947 had it not incorporated some promises of betterment of the Muslim masses. And this is why Moulana Bhashani interpreted the Pakistan movement as the movement of the oppressed people.

The Awami League gathered its popular support on the soils of then East Pakistan essentially on its initial demands, "the 42-point manifesto", which incorporated such commitments as the abolition of all rent receiving interests in land without any compensation and the distribution of the confiscated land among the landless peasants. The United Front (union of Awami League, Krishak-Sramik Party and the Ganatantric Dal, a communist faction) amassed overwhelming support and won the election in 1954 because through the union the Front could manage to cast a reflection of the mass expectations. It is widely held that the KSP which had the long-standing promise of social justice was largely instrumental in the success of the Front.

Recently (1968-69), the 11-point demand of the Students' Action Committee formed of the Students' League

(student branch of Awami League) and the Students' Union (a leftist group) aroused massive public support among all sections of the people and succeeded in bringing down the autocratic regime of Ayub Khan largely because the charter of demands upheld the promises of mass upliftment in addition to the Awami League's Six-point demand of autonomy. Evidently the establishment of Krishak-Sramik Raj (Rule of Peasants-Workers) became a popular slogan in 1969-70 while the Six-point Autonomy Movement was also gathering momentum. However, in apprehension of losing the leadership of the mass, the Awami League snapped a programme of radical economic and social reform and thereby ensured increasing popular support. In this sense it was the 11-point proletarian charter of demands which catapulted the Awami League at the helm of national leadership. It is fairly conclusive that the Awami League would not be able to amass overwhelming national support without identifying itself with the plebeian cause, for it is well accepted that when the Awami League first launched its movement for full autonomy in early 1966,

"It was primarily a movement of the Bengali national bourgeoisie and middle class who found their advancement blocked by their counterparts in Pakistan."²

From this standpoint, it was therefore the 11-point proletarian charter of demands which in fact mounted the

² Talukdar, Maniruzzaman; *Radical Politics and the Emergence of Bangladesh*, in Brass, P.R. and Franda, M.F. (eds.) *Radical Politics in South Asia*, MIT Press, Cambridge, Mass., U.S.A., 1973, p. 224.

Awami League at the helm of national leadership.

If political behaviour of the masses is any index of their mental aspirations then it must be inferred that the Bangalee mind has always been craving for a truly egalitarian solution. And wherever there was a mirage of equity and social justice, the perspiring mind ran towards it. The incipient Bangalee nationalism is thus equable to her innate desire to be free in a just society, and in this sense it is not incipient - it has a very long root indeed. In historical terms Bengal was never brought under the full grip of Magadha, Delhi or Islamabad culturally or politically. Egalitarianism is perhaps the most basic and original trait of the Bangalee mass mind - that is why it has appeared again and again whenever it got the chance.

In Bangladesh the natural instinct of the masses, therefore, is to find a way to egalitarian goals. They not only want a nationhood, they want a political and institutional force to give effect to those egalitarian goals. That there is now growing disillusionment with the Awami League and much allegation against its corrupt elements bears testimony to the basic wishes of the masses. The psychic infra-structure of the Bangalee population has its own image of social management. Until and unless that is achieved the yearning mind will not rest.*

* That Bangladesh has no uncertainty about its original nature or its earnestness to become and remain free has been traced and documented by Ramkrishna Mukherjee in his distinguished contribution to the Varma and Narain Collection /

Dr. Talukdar in a very recent research³ has tended to show that the leftist parties had created an initial atmosphere for socialist and secular nationalist appeal; and the struggle for Bangladesh has brought about a transition to secularism, socialism, linguistic nationalism supplanting the Islamic nationalism. But obviously due to the short duration of the struggle for liberation the elements could not be hardened enough such that the reactionary elements may succeed in obliterating the emerging national equanimity. And the mass aspirations may be put to sleep underground once again.

So far the Constitution of the People's Republic of Bangladesh is concerned, the high ideals of nationalism, socialism, democracy and secularism have been upheld as the fundamental principles. As the embodiment of the will of the people, the Constitution makes further pledges that it shall be a fundamental aim of the State to realize through democratic processes a true socialist society free from exploitation - a society in which the rule of law, fundamental human rights and freedom, equality and justice, political, economic and social, will be secured for all citizens.⁴ The Constitution

(Footnote contd. from p. 168)

Collection recently. See Varma, S.P. and Narain, V. (eds.); Pakistan Political System in Crisis: Emergence of Bangladesh, University of Rajasthan, Jaipur, 1972.

³ Talukdar, M., op. cit.

⁴ The Constitution of the People's Republic of Bangladesh, Ministry of Law and Parliamentary Affairs, Bangladesh Government Press, Dacca, 1973 - the Preamble.

acknowledges in writing that all powers in the Republic belong to the people.⁵

As the solemn expression of the will of the people the Constitution also lays down that a socialist economic system shall be established with a view to ensuring the attainment of a just and egalitarian society, free from exploitation of man by man.⁶ In pursuing socialist objectives it further enunciates that the people shall own or control the instruments and means of production and distribution, and with this end in view ownership shall assume the following forms: (a) state ownership embracing the key sectors of the economy, (b) co-operative ownership within the bounds of law, and (c) limited private ownership as prescribed by law.⁷

The Constitution makes dispensation of social justice a binding on the state (not in legal sense) by prescribing that it shall be a fundamental responsibility of the state to emancipate the toiling masses - the peasants and workers, and backward sections of the people from all forms of exploitation.⁸ And that the state shall adopt effective measures to bring about a radical transformation in the rural areas through the promotion of an agricultural revolution, the provision of rural electrification, the development of cottage and other

⁵ Ibid., Clause 7, p. 4.

⁶ Ibid., Clause 10, p. 5.

⁷ Ibid., Clauses 13 (a), (b) and (c), p. 6.

⁸ Ibid., Clause 14, p. 6.

village industries and the improvement of education, communications and public health in those areas so as to progressively remove the disparity in the standards of living between the urban and the rural areas.⁹

Indeed the Constitution truly reflects the innate desires of the masses - their aspirations and objectives. No one could criticize the Constitution in true earnest. It would all be very good if they were put into effect. It may just as well be reminded here that there is nothing more foolish or unprincipled than not responding to those values and objectives of the masses which they crave for and on the fulfilment of which depends the stability of any government. The leadership in Bangladesh can ensure social and political stability only by travelling down to the roots of the society.

In the context of Bangladesh the goals of nationalism, socialism and secularism are in essence but one - national equanimity, the spirit of Bangaleeism. Obviously what is needed is national unanimity, and not political factions or social divisions. Unfortunately the potential dangers of cleavage are too large at present to be discounted. During the election of 1973 most of the villagers voted for the Awami League not because they liked the party any more than their own basic aspirations, but because they wanted to give their beloved leader Banga-Bandhu (Lover of Bengal) Sheikh

⁹ The Constitution of Bangladesh, op. cit., Clause 16, p. 7.

Mujib another chance.¹⁰ For a national unanimity to emerge the uniform use of the Bangla language is a powerful cohesive asset. There is no doubt that the very strength of the linguistic bond helped develop the resistance, not only during the period of precipitated struggle, but all through the attempts of de-Bangalization by Pakistan. But obviously language alone is not enough. The reality of day to day struggle for survival against hunger and social discrimination makes it imperative to bring hope to the hard-pressed, the deprived and the belittled peasants and workers. This is the only key to national unanimity which will in turn fructify the goals of nationalism, socialism, secularism and democracy.

¹⁰ Reported by Ingvar Oja, a Swedish journalist who lived in Chittagong for five months, between November 1972 and March 1973. See "Struggle for Survival in a Village of Filth, Poverty and Hopelessness," The Times, March 26, 1973, p. viii.

II. STATEMENT OF THE PROBLEM

Chapter 8

PRESENT STANDARD OF LIVING

In the context of development, the successes and failures of a country are primarily reflected in the levels of living of its people. One does not have to be an economist to understand the implication of this simple standpoint. But the conventional way of measuring successes happens to be the economic measurement of growth and structural changes in the level and composition of domestic products, the invariable assumption being that higher level of production leads to higher standard of living and that structural changes (generally meaning a shift from agriculture to industry) brings about progress and greater well-being. Hence per capita GDP and/or Income is used as a convenient yardstick for measuring the economic standing of a community which obviously does not tell anything about the actual retail level of consumption of goods and services by the population.

In the case of Bangladesh even those comfortable tools of per capita Income and/or GDP estimates, highly arbitrary and unsatisfactory practices as they are, reveal very depressing profile:

"From the information over the two decades it is best to conclude that the long term rate of growth in per capita income has not been significantly different from zero,"¹

¹ Khan, A.R., Economy of Bangladesh, Macmillan Co., London 1972, p. 15.

and that

"The average standard of living in the sense of per capita GDP at constant prices was at best stagnant over the two decades; indeed it is more likely to have declined."²

Nevertheless, the gross situation strengthens the standpoint that the most sensible assessment of the levels of living would be an estimate of the per capita real consumption of goods and services. And still the most basic of all would be an estimate of the per capita retail intake of food and nutrition, i.e. cereals, proteins, fats and vitamins. Per capita intake of food and nutrition is the cornerstone of any level of living at all.

During the Third Plan period (1964-65 to 1969-70), production of rice, the staple food, increased by 2.5% per annum on the average, while population increased at an estimated rate of 3% per annum. The Economic Survey of 1969-70 reported an increase in income by 4.4% per annum for the same period. Evidently, the production of rice failed to meet the expanded demand created by the increase in population as well as the rise in income. In order to fill in the food-gap large quantities of cereal grains had to be imported. But, owing to the less than proportional import capacity, average per capita availability of cereals remained at about 159 Kg (351 lbs.) per year during the Third Plan period as compared to 163 Kg (359 lbs.) in the Second. This, however, conceals the per capita availability of the much desired cereal grain,

² Ibid., p. 18.

rice, which was much worse. Table 8.1 provides a general picture of availability of cereals during the last two plan periods.

The above mentioned Table shows tremendous fluctuations in the total availability of cereals, particularly of rice cereals. Although there was progressive increase in the import of cereals, this cannot be assumed to have meant much to the non-urban, non-wage-earning section of the population; for it is well known that in the past imported food grains benefitted only the ration-card-holding urban population. Moreover, due to the deficit availability of food grains in the face of growing population and some rise in income, prices of cereals soared up from Rs. 26.46 per maund in 1964-65 to Rs. 40.13 in 1969-70, an increase of more than 50% (10% per annum). It must be pointed out here that 4.4% p.a. rise in income largely meant an increase in the wages of the urban wage-earners, for, during the same period the prices of jute at the growers' levels did not rise in any rate of progression, rather it was grossly fluctuating. It may thus be concluded here that the reported rise in income did not truly touch the rural mass; on the contrary they were affected by the soaring prices of cereal grains. This must have been particularly a crippling blow to the landless or nearly landless peasants.*

* Dr. S.A. Qadir's survey findings bear testimony to the fact. "People of Dhaneswar," writes Dr. Qadir, "as a whole /

Table 8.1 Availability of Rice; Total and per capita.

Year	Population (in millions)	Total available (000 tons)		Available per capita per year		Per capita calorie (Kcal)
		Rice	Rice + Wheat	Rice	Rice + Wheat	
1960-61	55.57	8848	9040	(357 lbs.)	(364 lbs.)	
1962-63	59.07	8450	9141	(320 ")	(347 ")	
1964-65	62.79	9524	10069	(340 ")	(359 ")	
1966-67	66.48	8974	9611	(302 ")	(324 ")	
1968-69	70.39	10300	11165	(328 ")	(355 ")	
1969-70	72.43	10970	12130	(339 ")	(375 ")	

Source: Economic Survey of E.P. 1969-70, GOEP Planning Dept., Dacca, p. 20.

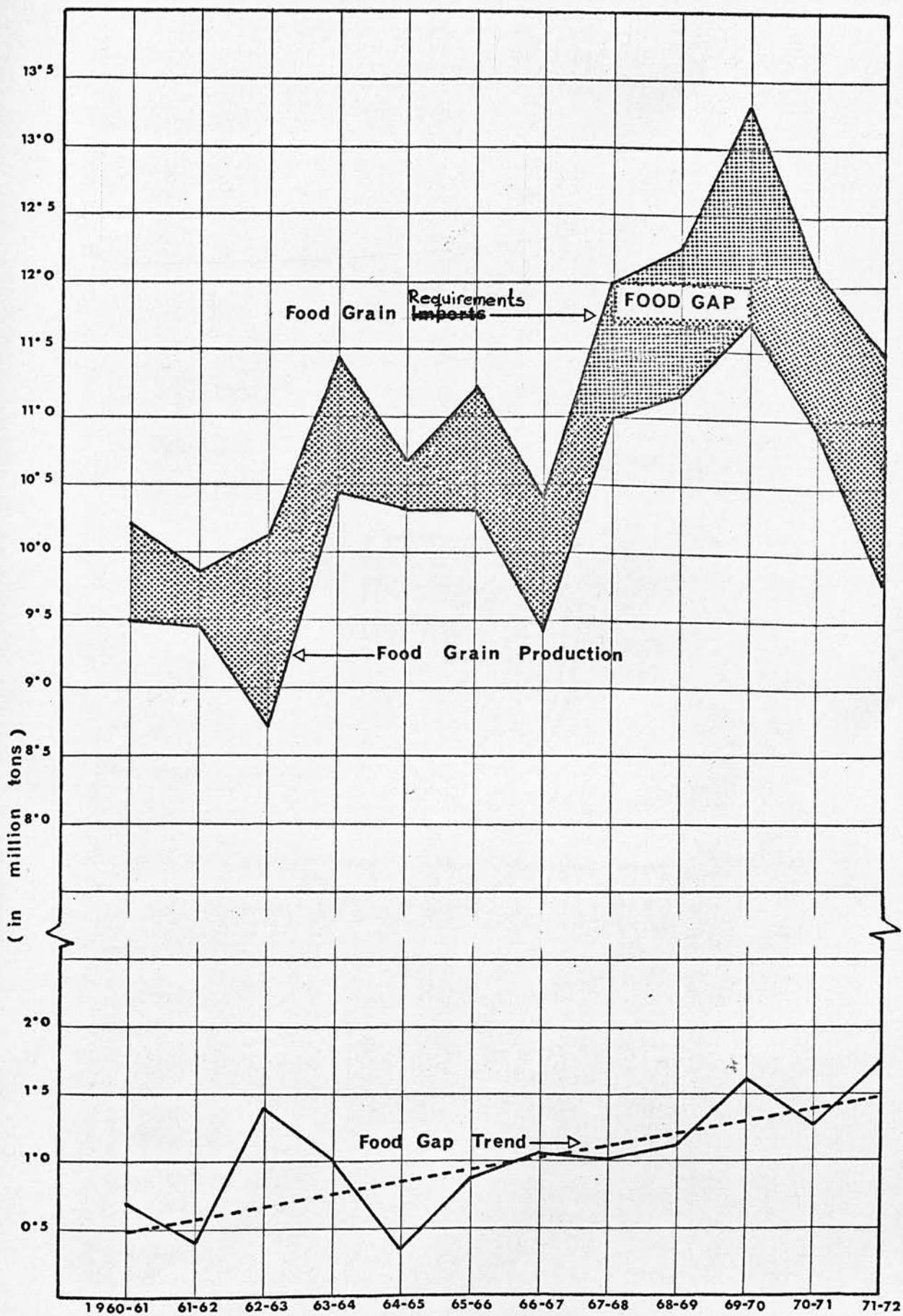


Fig. 8.1 Food Situation in Bangladesh

The urban population could not be expected to have been in a better situation in the late 60s than they were in the early 60s because their increased income was obviously neutralized by the increased cost of living. Tables 8.2 and 8.3 will make the whole picture more comprehensible.

Table 8.1 in conjunction with Tables 8.2 and 8.3 make it sufficiently clear that per capita availability of rice declined during the Third Plan period as compared to that of the Second. During the same period price of food recorded the highest increase in the wholesale price index. This was largely the result of an incredible rise in the price of rice, which again was activated by the shortage. While the cost of living indices skyrocketed in the major urban cities, industrial wages increased very insignificantly and the rural wages actually declined. Under the circumstances per capita consumption of food must have gone down, particularly the consumption of rice. Although there was import of wheat to fill up the gap, it did not, as mentioned earlier, benefit the vast majority of population. It is inconceivable therefore that there has been any rise in the

(Footnote contd. from p. 175)

whole are in want for part of the year. At least two months in a year usually just before the harvest, all families suffer more or less. About 90% of the families have to purchase rice at a high price. Sweet potatoes, and to some extent wheat are purchased to satisfy the hunger of the people." - As quoted in Ahmed, K.; Agriculture in East Pakistan, Ahmed Brothers Publications, Dacca, 1965, p. 84.

Table 8.2 Price of Rice and Jute vs. General Price Indices.

Year	Retail Price at Grower's Level		Wholesale Price Index (1959-60 = 100)			
	Rice (coarse) per maund	Jute (combined) per maund	General	Food	Raw Materials	Manufactures
1960-61	Rs. 23.66	Rs. 47.94	102.8	96.5	135.7	107.3
1962-63	28.01	21.95	106.2	108.4	96.0	102.8
1964-65	26.46	31.47	111.2	111.5	113.9	107.0
1966-67	40.12	36.03	141.5	148.5	122.5	115.7
1968-69	39.97	34.01	141.1	147.1	122.5	122.1
1969-70	40.13	31.98	N.A.	N.A.	N.A.	N.A.

Source: Economic Survey of E.P. 1969-70, pp. 20, 117 and 115.

Table 8.3 Wages vs. Cost of Living Indices

Year	Real Wages(a)		Cost of living indices: 1959-60 = 100(b)			
	Industrial Index 1954 = 100	Year	Rural Index 1949 = 100	Year	Dacca	N. Ganj Chittagong
1955	88.4	1955	92.8	1960-61	99.0	100.7 104.1
1957	91.4	1959	88.5	1962-63	104.5	107.2 114.7
1958	93.6	1960	88.0	1964-65	115.5	113.8 125.1
1959-60	93.8	1961	100.5	1966-67	134.5	126.1 142.2
1962-63	96.4	1965	96.9	1968-69	142.6	134.5 150.2
1967-68	101.1	1966	82.3	1969-70	N.A.	N.A. N.A.

Sources: (a) Khan, A.R., Economy of Bangladesh, op. cit., p. 19.
 (b) Economic Survey of E.P. 1969-70, p. 116.

average level of living in the recent past. On the other hand, there has been very distinctly visible rise in the living standards of the higher income groups, particularly in the urban areas signifying increasing inequality in the distribution of income and buying power. This is the hypothesis held by Dr. Khan as well when he writes:

"Given the easily observed but so far unquantified phenomenon of an appreciable rise in the living standards of the upper income groups in the urban areas, it would be reasonable to conclude that the stagnation in the average standard of living was accompanied by increasing inequality of income distribution."³

This issue will become clearer later.

Describing the standard of living in terms of per capita food available is still far from describing the reality. Specially when inequality in income distribution is indicative, existing level of living will not be revealed unless a detailed account of actual food consumption at the retail level is examined.

Unfortunately there is no up to date information available on the consumption of food at the retail level. The most elaborate and perhaps the only account yet available on actual food consumption is provided by the Nutrition Survey of East Pakistan which was carried out jointly by the Government of Pakistan, U.S. Department of Health, Education and Welfare and the University of Dacca during 1962-64. The findings of the survey are summarized in the following tables:

³ Khan, A.R., op. cit., p. 18.

Table 8.4

Food Intake

Food items	Average per capita per day intake (in grams)		Range of variation in consumption according to income groups (in grams)	
	Rural	Urban	Lowest	Highest
Rice and other cereal	533	363	506	649
Starchy roots	56	32	47	67
Sugar and Sweets	7	12	6	18
Pulses and Nuts	29	26	23	80
Vegetables	138	138	126	175
Fruits	10	18	0	11
Meats	6	20	0	13
Eggs	2	3	0.7	5
Fish	33	41	23	58
Milk and Cheese	17	53	10	58
Fats and Oils	6	14	5	22
Misc. Spices	5	10	-	-

Table 8.5
Pattern of Nutrient Intake

Nutritional components	Per capita nutrient intake per day (average)		Range of variation in per capita nutrient intake/income group		Percentage of sample population below prescribed nutrition level	
	Rural	Urban	Lowest	Highest	Rural	Urban
Calories (energy Kcal)	2218	1732	1449	3170	45.7	76.4
Protein (gms)	58.75	49.5	52.12	76.90	60.8	77.2
Fat (gms)	17.89	25	14.05	27.49		
Carbohydrates (gms)	465	327	424	659		
Calcium (mg)	329	226	291	548	85.8	93.9
Iron (mg)	10.34	8.5	8.85	15.60	67.9	79.6
Vitamin A (IU)	1585	1795	1408	2191	83.8	80.8
Thiamine (mg)	1.46	1.03	1.33	2.06	15.5	39.1
Riboflavin (mg)	0.50	0.54	0.44	0.76	86.6	80.3
Niacin (mg)	21.40	14.30	19.90	27.60	7.8	37.9
Vitamin C (mg)	39.90	38.5	28.20	55.20	60.1	59.3

Note: Although the information contained in the foregoing Tables (8.4 and 8.5) is not up to date, they provide a very dependable bench-mark for the early 60s on which we can base our future speculations. Since it has already been established that the per capita availability declined in the late 60s, and since inequality in the distribution of food is almost certain, we can hypothesise that the actual food consumption at retail level went down during the late 60s compared to the early 60s and consequently the nutritional status of the population in question must have gone down parallelly.

Table 8.5 shows that on the average calorie intake is adequate, according to FAO standards, in the rural sample but below adequate in the urban population sample. What is distressing is the picture behind this average profile: that there is a startling range of variation in the calorie intake according to differing income groups; that more than 54% of the sample population, both urban and rural combined, are below the required level of calorie intake as prescribed by the FAO; and that the percentage of calorie starvation is much higher in the urban sample than it is in the rural.

Protein deficiency is even more serious. More than 65% of the combined sample population have a protein intake below the required level. Again protein hunger is proportionally much higher in the urban areas than in the rural. Similarly, there is an alarming rate of

deficiency in the intake of calcium, iron and the vitamins.

Apart from these quantitative deficiencies, the diet of the average population is poorer still in qualitative terms specially in the composition and proportioning of the different food items and their respective nutritive properties. Rice cereals and starchy roots constitute 70% of the total food consumed by an average person (Table 8.4). As a result, 82% of the total calorie intake happens to be of carbohydrate origin, 11% comes from protein and 7% from fats. This is the major source of qualitative deficiencies in the Bangalee diet. Rice, like all other cereals, does not contain sufficient amount of all the nutrients that are essential for normal health. But loses more of its nutritive properties between harvesting and consumption than do other staple cereals. Milling and household preparation which involves washing, boiling and draining, lead to serious losses of nutrients. An investigation conducted in some parts of India showed the following losses from rice due to washing and cooking:⁴

Iron	75%
Calcium and Phosphate	56%
Protein	10%
Calories	15%
Thiamine	85%

⁴ As quoted in Ahmed, K., Agriculture in East Pakistan, op. cit., p. 90.

On the problems of rice diet FAO has long ago warned that rice diet is deficient in B vitamins, A vitamins, protein and calcium.⁵ At the same time it was made clear that under-nutrition, mal-nutrition and deficiency diseases are common in those rice-eating countries where the typical diet contains too much of rice. The deficiency of rice diet in calcium and riboflavin is particularly difficult to correct.

Predominance of rice in the diet brings about a number of other problems also. As rice swells in cooking to about five times its dry bulk, the system of the consumer demands larger volumes of it in order to meet the required amount of energy. This interferes with the normal digestion and protein absorption in the metabolic process. However, heavy intake of rice is believed to diminish the absorption of elements from other less bulky but more necessary food items.⁶

If the nutritional survey cited earlier is a representative sample of the nutritional standard of the entire population in Bangladesh, it can safely be stated that the majority of the population suffer from quantitative as well as qualitative deficiencies in their food and nutritional intake - this is the stark quantification of the standard of living in Bangladesh. This dismal nutritional standard of the population has much more

⁵ UN/FAO, Rice and Rice-diets, FAO Nutritional Studies No. 1, 1952.

⁶ Aykroyd, W.R. et al., The Rice Problem in India, Indian Medical Research Memoirs, No. 321, 1940.

serious and wider ramifications than is popularly appreciated. In the final analysis it will be found that the major problems of underdevelopment of the country rest on the appalling standard of food and nutrition. Let us now briefly examine some of the implications of deficient intake of food and nutrition.

Although the investigation into nutritional requirements is admittedly very complex and far from complete, this much is known with certainty that the energy expended at work or daily activities must be replenished, by energy intake. A balance between calorie requirement and calorie intake is the first requisite; but it is not the only one. Protein which is one of the main components of the body structure, must be supplied by the diet in quantities sufficient to build up and maintain muscular tissue.⁷ A diet in order to be adequate, therefore, must provide enough energy and protein to compensate for the energy losses as well as for making up the N losses through urine, faeces and sweat and the amount needed for the formation of new tissues or repairing the damaged ones. More recent nutritional studies⁸ inform us that there is a direct inter-relationship between calorie (energy) and proteins. Energy intake affects protein utilization and metabolism in the

⁷ Freedom From Hunger Campaign, Basic Study No. 5: Nutrition and Working Efficiency, UN/FAO, Rome, 1962, p. 11.

⁸ WHO Technical Report Series No. 522, Energy and Protein Requirements - Report of a Joint FAO/WHO ad hoc Expert Committee, Geneva, 1973, p. 19.

following ways:

Some reduction in energy intake below requirement results in a loss of body protein in the adults, or a reduction in the growth rate of the young.

A severe reduction in energy intake impairs the utilization of proteins added to the diet.

Prolonged reduction of both energy and protein intake results in some adaptation through a reduction in the energy out-put (working capacity).

In growing organisms the first effect of reducing energy intake is to reduce growth - it has been proved in laboratory conditions that increasing protein without energy or increasing energy without protein both are equally ineffective.

When energy intakes are deficient, part of the dietary protein is used up to provide energy.

It is widely recognized in the literature on nutrition that the nutrition of the pregnant woman has an important influence on the course of pregnancy and the health of the baby. During pregnancy lack of nutrition retards the growth of the fetus, the placenta and the associated maternal tissues. Low birth weights are usually related to the conditions of under-nutrition. Protein is believed to be of vital importance for the normal brain development of children, for 80% of the brain-cell growth takes place in the first three years. In addition, the supply of sufficient amounts of vitamins and minerals are of great physiological importance for

general health and the development of full working capacity.

Experiments in Guatemala, India and elsewhere have given evidence that children and adolescents in the villages that have been given various food supplements, show greater growth rate, more haemoglobin, better scores in intelligence tests and diminished death rates than those who got no supplement.⁹ Basing on several reports on experimental works and field observations, FAO concludes that provision of an adequate, balanced diet has a beneficial effect on working efficiency, general well-being, and ultimately on production.

Individual experts who have studied this subject in the different countries and almost all the official commissions agree that a poor diet is an important cause of reduced capacity for work because:¹⁰

the body tends to protect itself from the lack of proper food by avoiding effort, the final result being lethargy, lack of initiative and drive, and undue preference for leisure;*

a poor diet lowers the worker's resistance to disease;

⁹ WHO Technical Report Series No. 522, op. cit.

¹⁰ Freedom From Hunger Campaign Basic Study No. 5, op. cit., p. 6.

* These symptoms have been taken by many observers as general laziness. Sometimes the behaviour pattern is labelled as purely cultural or ethnic characteristics, or as a philosophical attitude towards life and its challenges, or fatalistic belief, etc.

it leads to a considerable amount of absenteeism due to sickness.

So far as malnutrition is concerned, WHO publications on the subject have made it amply clear that it is the killer, more dangerous than under-nutrition. The two most popular manifestations of malnutrition (protein-calorie imbalance) amongst children are kwashiorkor and marasmus, which are not only fatal by themselves but, in addition, are contributory factors in making the victim vulnerable to a whole range of communicable diseases. Other manifestations of malnutrition are blindness, which may be caused by avitaminosis-A; wasting and paralysis of the limbs and failure of the heart caused by beriberi; stillbirth and maternal deaths in childbirth caused by nutritional anaemia of pregnancy; disturbance of the growth of the bones leading to deformities caused by rickets and osteomalacia; cretinism and deaf-mutism caused by endemic goitre; dementia caused by pellagra; and dermatoses caused by deficiencies of Vitamins B and C. In addition to these serious diseases, a relationship has been shown to exist between malnutrition and certain intestinal infestations and infections.¹¹ Malnutrition in childhood has grave lifelong consequences. People who in their childhood suffered from malnutrition, later frequently seem unable to attain a normal working

¹¹ Freedom From Hunger Campaign, Basic Study No. 12: Malnutrition and Disease, WHO, Geneva, 1963, p. 47.

capacity, even with an adequate diet.¹²

In Bangladesh the manifestations of under-nutrition (quantitative deficiency) and malnutrition (qualitative deficiency) are not to be looked for - it is there everywhere. The looks of the children, behaviour of the adult masses and the general health situation bear testimony to the truth. Infant mortality rate is 142 per thousand live births, as compared to 11.7 in Sweden, 18.4 in U.K. and 13 in Japan. Dietary diseases such as diarrhoea, cirrhosis of liver, beriberi, blindness, dropsy, stomatitis, oedema and kwashiorkor are fairly common. But the major effect on the total mortality is rather indirect - it is in the form of lowered resistance to infectious diseases like cholera, smallpox, typhoid, tuberculosis, pneumonia, other respiratory diseases and leprosy. Against so many odds, average life expectancy is as low as 48 years at birth.

Apathy, lethargy, lack of initiative and defective intelligence is so widespread that Western observers have not hesitated to call it ^acultural characteristic. During the thirties more than a million people died every year of malarial fever alone in then Bengal. The number of people who survived is greater than those who died. It is those survivors with lessened strength and mental agility who have been behind the plough and who have given birth to and raised weaklings. It is no wonder

¹² African Labour Efficiency Survey, London, HMSO., 1949, quoted in Freedom From Hunger, Basic Study No. 5, op. cit., p. 12.

then that agricultural production, the mainstay of the country's economy, is languishing. Underfed, miserable people with little hopes and aspirations, faced with the high probability of infant death for many of their children, with no assurance of future security except their own children, are not motivated towards birth control. All they can contribute to this world is to bring in more life and more prolonged miseries. So the vicious circle (or perhaps spiral) starts: weak ploughman — stagnant productivity — less food available per capita — more weak ploughmen, and on and on.

The poor level of public health is further aggravated by the dismal public health facilities available in the country:

1	Registered Doctor	per	8,800	people*
1	" Nurse	"	98,300	" *
1	" Midwife	"	107,400	" *
1	Hospital Bed	"	9,300	" *
1	Public Dispensary	"	51,200	" *

It must further be reminded that most of these facilities are concentrated in the urban areas, rendering the facilities away from the people who need them most.

The insanitary conditions prevailing in both the rural and urban areas and the total absence of pure

* These figures are obtained by dividing the number of doctors, nurses, hospital beds, etc., by the total population for the year 1969, the latest information on health facilities provided by the Statistical Digest of Bangladesh, No. 7, B.B.S., Dacca, 1970-71, pp. 264, 265.

drinking water in the rural areas adds fuel to the fire. Lack of sanitation creates a potent environment for intestinal infestation, and the protein deficient population catch infestation very easily. Intestinal parasites interfere with the absorption of protein. Physiological protein waste by the intestinal parasites (hook worm and blood loss) is a well-known malady. Under the circumstances, what is the level of physiological ^{absorption} ~~intake~~ of nutrients, remains an open question.

From food, nutrition and the consequent health standards, let us now move to consider shelter and clothing which must be taken into account in any assessment of the levels of living. Rural housing has always remained beyond any public concern such that very little information is available on the subject. As described in Chapter 6, the majority of the rural population live in huts of thatched roofs and mud floors, and the walls may be of mud or split-bamboo woven into mat. These huts are mostly so frail that they hardly offer any protection against severity of nature. Often they fail to withstand the calamities like floods or cyclones. As a result, the family savings which could otherwise go for making up the inadequate diet or towards savings, are compellingly diverted towards reconstruction, repair and maintenance of the shelters. The Statistical Year Books of the Central Statistical Office of Pakistan suggest the following pattern of family expenditure in the rural areas: Food 71%; Housing 12%; Clothing 5%;

Miscellaneous 12%. Conceivably a high proportion of the expenditure on housing is simply a recurring expenditure for maintenance and reconstruction and as such the expenditure cannot be called capital building in any sense. This item is a continuous drain in the rural peasant's meagre economy which keeps him tied down to the miserable level of living.

Housing in the urban areas is characterized by the notorious phenomenon of room-overcrowding, a familiar problem of almost all the cities in the Third World. An average family is found to live in an average accommodation of 1.5 rooms. More than 70% of the dwellings may be temporary constructions of non-masonry type, 82% are found to be without any municipal water connection and 97% are without any electricity.¹³

So far as clothing is concerned, information is even more difficult to come by. However, with some rule of thumb Dr. Khan estimated that

"In 1966-67 annual per capita consumption was $7\frac{1}{2}$ yards of average quality long cloth equivalent in rural areas and $12\frac{1}{2}$ yards in urban areas. This would barely work out at one set of clothing per person in rural areas during a twelve-month period. Perhaps for a vast proportion of the population there is no more than a couple of loin cloths per year."¹⁴

Education is another important social index in measuring the levels of existence of any community. In the 1961 census only 17.6% of the total population was

¹³ Khan, A.R., op. cit., p. 25.

¹⁴ Ibid., p. 25.

rated as literate including those possessing rudimentary knowledge of reading and writing in any one language (Bengali, English, Urdu or Arabic). Literacy rate in the rural area was found to be about 15% and in the urban area 38%. Of all the 'literate' persons, 92.2% had general education, 7.5% religious education and only 0.3% had technical education who presumably were serving the urban job market. Literacy rate was reported to have gone up to 25.7% by 1968, but this is doubtful.

In purely monetary terms, the situation that prevails among the rural masses of Bangladesh only reinforces what has been described so far. With stagnant productivity, fluctuating prices for the cash crop and unfavourable price structure, a significant number of the peasants are forced to go for disinvestment in their means of production. It was found in the 1960 agricultural census that as much as 45% or more of the rural families, under compelling circumstances, dispose of some of their assets during a year; the assets most commonly being land, draught animals, utensils, ornaments or even the C.I. sheets from the roof of the hut, if there are some. Or, alternatively, they enter into debt - as such in 1960 about 49% of the farm families were found to be in debt of more than three hundred rupees on the average. Further, it was found that nearly 70% of the borrowing was necessitated by the need of family expenditure of which about 80% was meant for family consumption of food and clothing. And this was again a recurring affair.

It was reported in 1967¹⁵ that 53.7% of the families were in debt of some sort. It was also revealed that 80.7% of the families needed loans. The following comparison of data on the loan expenditure pattern reported at two different years confirms one and the same thing, that the families need credit not only to pay for the agricultural inputs but for the consumption needs of the working hands in the family:

Table 8.6 Loan Use Pattern

Purposes	Loan use in percent	
	1956 ^(a)	1967 ^(b)
Family expenditure	69.3	48.03
Capital expenditure on farming	9.3	24.03
Current expenditure on farming	10.4	18.73
Non-farm expenditure	8.3	9.21
Repayment of debt and other purposes	2.7	-

Sources: (a) Dacca University Socio-economic Board Survey Report, 1956; cf. Ahmed, K., op. cit., p. 73.
 (b) The Registrar of Cooperative Societies: Agricultural Credit in East Pakistan, Survey Report, Dacca, 1967; cf. Khan, A.R., op. cit., p. 54.

The facts cited so far themselves speak for the precarious monetary problems and the vicious cycle of indebtedness in which about half of the agricultural families are gruelling. There is one more cruel fact

¹⁵ The Registrar of Cooperative Societies, Agricultural Credit in East Pakistan, Survey Report, Dacca, 1967, cited in Khan, A.R., op. cit., p. 54.

here. Government credits constitute only 10 to 15 percent of the peasants' total borrowings, the rest come from private individuals at very high rates of interest and often on unsocial and unethical terms and conditions. Under the circumstances paying for better seeds or improved implements remain a luxury that the majority of the peasants cannot afford.

Thus on several counts the incredibly low level of living of the vast masses of Bangladesh stands out conspicuously and perhaps unparalleled even in the frame of reference of the Third World countries. The dismally low level of existence in association with other factors has tremendous repercussions on productivity and thus on the entire performance of the economy. It is to this aspect of the problem that we turn to now.

Chapter 9

PERFORMANCE OF THE ECONOMY

In Chapters 4 and 5 we have seen that agriculture occupies a paramount position in the structure of the economy of Bangladesh. As a matter of fact performance in agriculture conditions the mobility of other sectors of the economy. Export earnings of the country are determined by the level of production of one major crop, jute. Major industries of the country are agro-based. The bulk of trade and transport is also dependent on the level of agricultural production. Therefore, any assessment of the performance of the total economy must be committed primarily to a comprehensive analysis of this key sector.

Agricultural production in Bangladesh has one of the poorest records in the world. During the last ten years there has been no significant rise in the per-acre yield of rice (see Table 9.1). An increase or decrease in the total production of rice has been mainly in response to an increase or decrease in the total area under the crop. What is more lamentable to note is that productivity in rice is lower than that of Vietnam (North and South), a region engaged in ceaseless war (see Table 9.2). Productivity in other crops, particularly in jute, have followed the same trend (see Table 9.3 and Fig. 9.1). Over the past two decades, the Third Plan period (1965-70) was acclaimed to have made 'significant progress' in

Table 9.1 Acreage, Production and Rate of Yield
of Rice in Bangladesh

	Total Area (in million acres)	Total Production (in million tons)	Average Yield per acre (in kilogrammes)	
1960-61	21.81	9.52	435	
1961-62	20.96	9.46	451	
1962-63	21.48	8.73	406	
1963-64	22.26	10.46	470	
1964-65	22.80	10.34	453	444.83 Average yield rate
1965-66	23.13	10.33	447	
1966-67	22.41	9.42	420	
1967-68	24.43	10.99	450	
1968-69	24.07	11.16	463	
1969-70	25.46	11.71	460	
1970-71	24.48	10.96	449	
1971-72	22.62	9.81	434	

Source: Economic Survey of East Pakistan 1969-70

Note: Figures for 1970-71 and 1971-72 are taken from
the Financial Times, London, 14/12/72, p. 22.

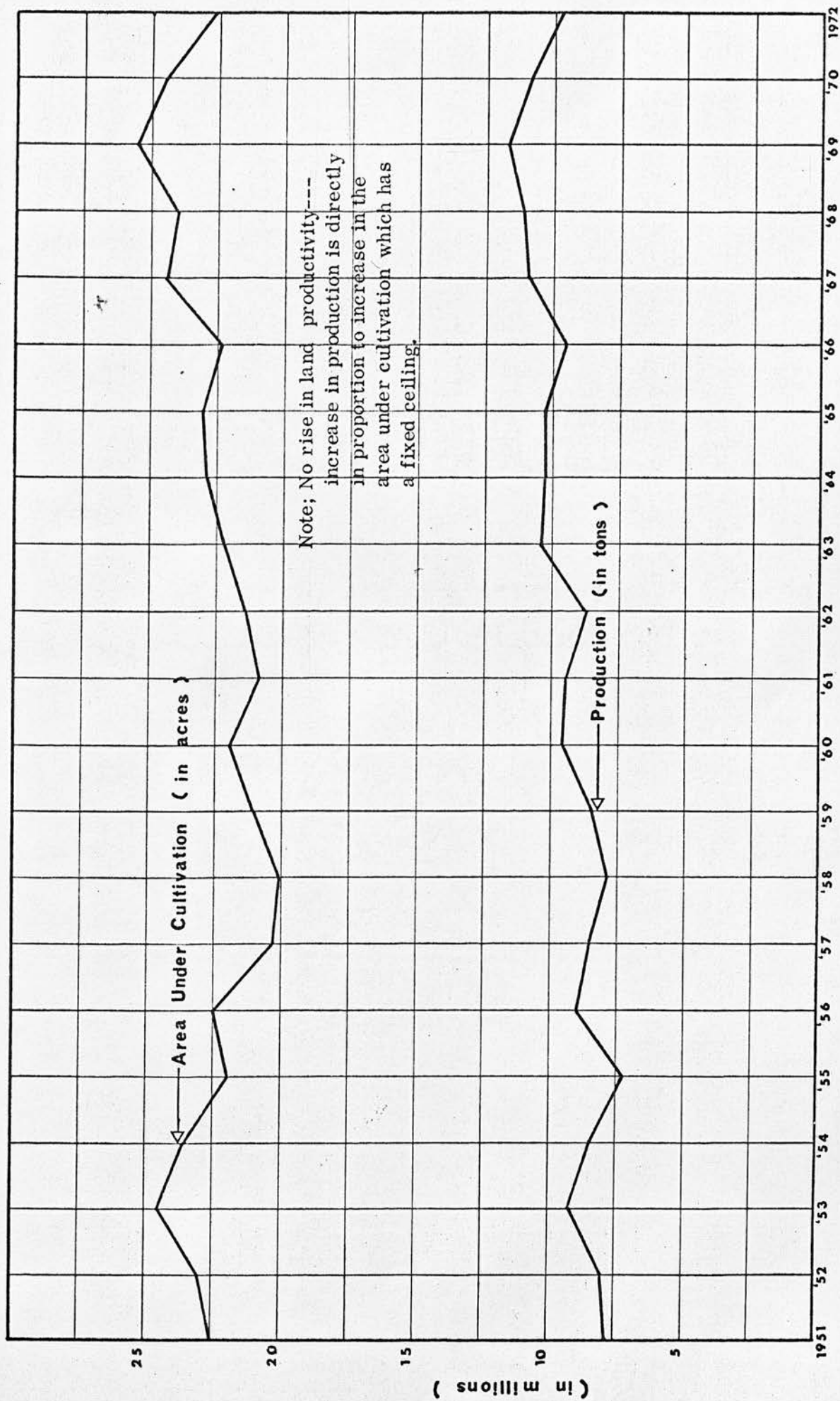


Fig. 9.1 Rice Production Situation in Bangladesh.

Table 9.2 Rice Yield per Hectare in some
Selected Countries
(in kilogrammes)

	Paddy Rice	Milled Rice*
Australia	7080	4744
Spain	6113	4096
Japan	5393	3613
Egypt	5223	3499
Italy	5115	3427
Morocco	4950	3316
U.S.A.	4863	3258
Greece	4728	3168
Republic of Korea	4353	2916
Turkey	3818	2558
Taiwan	3745	2509
Algeria	3163	2119
China	2760	1849
Malaysia (West)	2695	1806
Ceylon	2320	1554
Republic of Vietnam	2113	1416
Democratic Republic of Vietnam	1933	1295
Nepal	1918	1285
Indonesia	1915	1283
Thailand	1875	1256
Burma	1673	1121
Bangladesh	1641	1099
India	1588	1064
Philippines	1525	1022

* At the average rate of 67% extraction.

Note: Data on paddy rice for all countries except Bangladesh have been taken from FAO, Agricultural Production Year Book 1972. The figures represent averages for 1961-65, 1967, 1969 and 1971 except that of China which is the average for 1961-65. Bangladesh's figure for milled rice has been derived from the Table 9.1 and converted back into paddy rice.

Table 9.3 Index of Yield per acre of
Principal Crops
(Bases: 1960-6 = 100)

	Rice	Jute	Lentils	Rape and Mustard	Sugar cane	Tobacco
1961-62	104	91	109	101	107	116
1962-63	93	83	97	105	105	112
1963-64	108	93	107	103	109	110
1964-65	104	87	99	113	123	104
1965-66	103	86	101	116	140	99
1966-67	97	80	103	121	138	133
1967-68	103	77	103	131	130	138
1968-69	107	72	106	133	126	142
1969-70	106	78	108	136	128	145

Source: Statistical Digest of Bangladesh No. 7,
1970-71, BBS, Dacca.

Table 9.4 Jute Yield per hectare in some
Selected Countries
(in kilogrammes)

China	2230
Taiwan	1873
Japan	1613
Bangladesh	1305
Peru	1303
India	1275
Nepal	1153
Brazil	1095

Source: FAO Agricultural Production Year Book 1972.

Note: The figures represent average for 1961-65, 1967, 1969 and 1971. The figure for Bangladesh appeared under the name of Pakistan in the Year Book. Since West Pakistan did not produce any jute at all, the figure represents the production of Bangladesh exclusively.

agriculture. Even during that 'progressing' period agricultural production increased at an annual average rate of 3.3% against a plan target of 5%. Major shortfall in the agricultural sector occurred in the production of rice. Rice production, which constitutes over 80% of the total production of major crops, increased from 10.3 million tons in 1964-65 to 11.7 million tons in 1969-70 - an increase of 13% as against a plan target of 27% in the period. Production of jute remained stagnant at 7 million bales* for 1969-70 against envisaged target of 8 million bales - a shortfall of 12%.¹

The causes of such failures and stagnation are many and varied. The chief handicaps in agricultural productivity may be identified as follows:

- a) Poor man-land ratio and improper land distribution.
- b) Inadequate land utilization.
- c) Inefficient technique and means of production.
- d) Lack of supportive actions from the Government and above all
- e) Poverty and ill-health of the majority of the peasants.

Man-land ratio and land distribution

According to the Agricultural Census of 1960, land available for cultivation was 2.5 acres (1.01 ha) per

* 1 Bale = 400 lbs. = 181.436 kg.

¹ Economic Survey of East Pakistan 1969-70, GOEP, Dacca, 1970, p. 41.

family of six, taking the non-owning peasants also into consideration while the average farm size was 3.54 acres (1.43 ha). It has been pointed out in Chapter 5 that more and more families are being pushed into below average holdings and quickly becoming landless. The Master Survey of East Pakistan Agriculture 1968 has confirmed this observation. It has also been shown in the same chapter that in the recent past more than half of the owner farmers have had below average land holdings, altogether cultivating only 16% of the total cultivated land; and that, of this below average group, about 25% of the families had only less than half an acre of land each. In view of the demographic trend and the law of inheritance (which activates faster fragmentation till a parcel of land becomes unworkable), it has further been indicated that by now as much as 40% of the agricultural labour may be virtually landless. Landless labourers and near-landless peasants have no choice but to become wage workers and/or tenant farmers, both of which are very inefficient processes as they kill incentives, the very foundation of productivity.

Although it was shown in 1960 census that 82% of the total cultivated area was owner operated, it did not tell us whether these lands were directly worked by the owners themselves or through hired labour. In view of the increasing landlessness it is presumable that the larger farms, i.e. the units which are more than double the size of the average farms, or above, employ hired labour (such

farms cover more than 37% of the total cultivated land). However, Dr. Khan holds a slightly different view in this regard; he suggests:

"A good many of the larger owners rent out their land to be operated by smaller owners, and to a very small extent, by landless farmers."²

In any case, both are undesirable processes so far as productivity is concerned. It is well known that according to the conventional practice of share cropping, at least 50% of the produce goes to the landowner, while the responsibility of any investment required for the production remains with the tenant. Thus the system inevitably kills the incentive of the tenant. It may be recalled here that according to 1960 Agricultural Census about 88% of the tenant operated farms were based on share-cropping. Similarly, the landless wage workers find no interest in the total produce or the rate of production per unit of land. It is quite probable, therefore, that production in 30 to 40 percent of the owned land languishes in a wasteful manner. The following pattern of cropping intensity revealed in 1960 Agricultural Census confirms the supposition:

<u>Size of Farms</u>		<u>Cropping intensity</u>
Small farms	(under 2.5 acres)	167%
Medium farms	(2.5 acres to 12.5 acres)	148%
Large farms	(12.5 acres and above)	130%
Very large farms	(40 acres +)	117%

² Khan, A.R., Economy of Bangladesh, Macmillan, London, 1972, p. 41.

Another wasteful aspect of the land pattern is the widespread fragmentation of holdings. 96% of the farm land was found to be in fragmented holdings, involving 90% of the farms - only 10% of the farms were unfragmented. 38% of the farms had 2 to 5 fragments, 23% had 6 to 9 fragments and 29% had 10 or more fragments. Though fragmentation is particularly harmful for the small holdings yet in this group (i.e. less than 2.5 acres) 83% were found to be fragmented. The situation must be worse now.

In summary it must be reiterated that in Bangladesh man/land ratio is very low and there is no scope for geographic expansion. Although the proportion of big land holdings may not appear to be intolerable in the conventional judgement, in view of the meagre man/land ratio, the existing degree of inequality is detrimental enough for increase in productivity. The productivity consequences of landlessness or near landlessness and the associated practice of share-cropping, renting and wage-earning is sufficiently clear in Bangladesh.*

* Evaluating the current land reform, Iftekhar Ahmed and John Timmons arrive at the conclusion that because of shortcomings in the tenancy system, resource allocation is less than optimal and the distribution of returns is not proportionate to the productivity of the factors of production in agriculture. As a consequence, the level of productivity in agriculture is below the optimal level. See Ahmed, Iftekhar and Timmons, John F.; Current Land Reform in East Pakistan, Land Economics, Vol. XLVII, No. 1, p. 56.

Inadequate land utilization

In Chapter 4 we have seen that cropping intensity increased from 1.18 in 1950-51 to 1.38 in 1968-69. In historical terms also there has been very insignificant increase in the cropping intensity, as Mr. Ahmed reports that the cropping intensity in Bengal in 1928-29 was about 120%.³ Cropping ratio falls to 0.96 if all the cultivable land including the cultivable waste is taken into account. Only about 35% of the area is reportedly cropped twice in a year. Some concerned authorities hold that the area under double cropping is about 25%; and the area under triple cropping is very small indeed. Besides, the raised boundaries demarcating the subdivisions of the fragmented plots take up about 3% of the cultivated areas.⁴ All these practices appear to be ironically paradoxical, particularly in view of the striking land scarcity in Bangladesh.

However, it will be a gross mistake to assign only cultural explanation to such self-defeating agricultural practices. Perceivably the degree of cropping intensity varies within the country depending on the local hydrography, soil moisture and density of population, such that the southern dense regions have higher cropping

³ Ahmed, K., Agriculture in East Pakistan, Ahmed Brothers Publications, Dacca, 1964, p. 112.

⁴ "It has been found from a detailed survey of a village in Comilla district that a little over 3% of the cultivated areas are occupied by the ails (raised boundaries)" - ibid., p. 65.

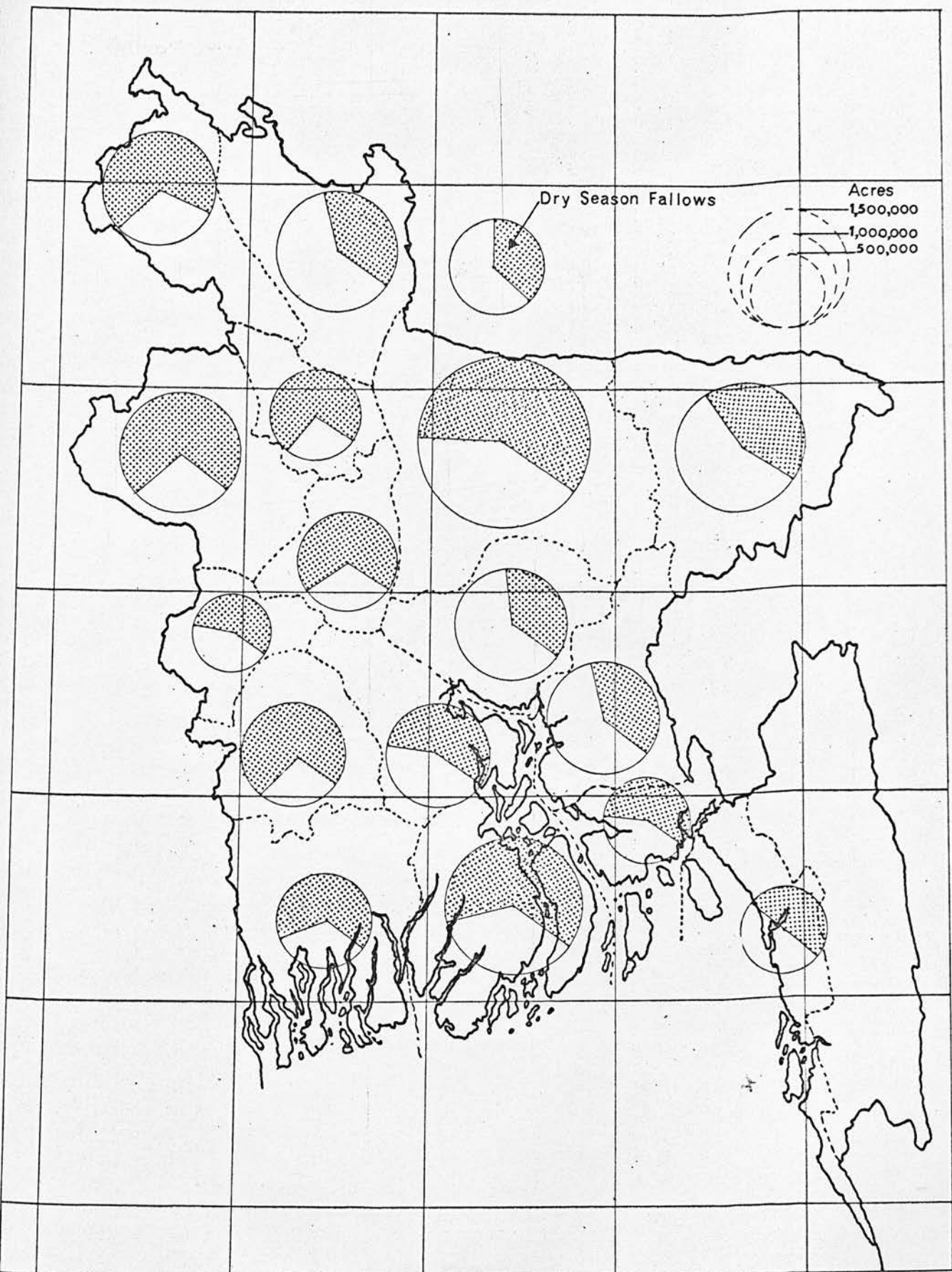


Fig. 9.2 Proportion of Land Fallowing During Dry Season
 (After Huq, O.; Dry Season Fallow in East Pakistan;
 The Oriental Geographer, vol. X, no. 2, July, 1966)

Table 9.5 Approximate Acreage of Dry Season Fallow

Districts	Fallow area in acres	As percent of net area sown
Dacca	436,047	35.90
Mymensing and Tangail	1,711,641	58.51
Faridpur	712,469	56.43
Chittagong	338,613	48.21
Noakhali	469,872	57.75
Comilla	515,364	38.91
Sylhet	739,138	43.94
Rajshahi	1,058,548	71.18
Dinaajpur	767,496	75.07
Rangpur	553,522	37.23
Bogra	605,369	74.01
Pabna	657,029	69.51
Kushtia	331,033	55.00
Jessore	806,326	72.96
Khulna	566,552	65.95
Barisal and Patuakhali	1,177,538	64.19
Total	11,446,358	57.03

Source: Huq, O., Dry Season Fallow in East Pakistan,
The Oriental Geographer, Vol. X, No. 2,
July 1966.

intensity than the northern regions which have inadequate surface water in their medium and high lands. It is also well known that crop acreage for the early rainy season crop is restricted a great deal due to the risk of flood. During the monsoon as much as 15% of the total cultivable land remains under water of six feet or more in depth and as such nothing can be grown on those areas. Although agricultural practices to a large extent have been adjusted to normal annual flooding, uncertainty of its onset in terms of time, duration, depth and recurrence cripples crop production extensively. On the other hand, vast areas remain fallow due to the lack of moisture during the dry winter and early summer season (see Table 9.5). Thus, although temperature is permissive for raising crop round the year, lack of water in one season and too much of it in another circumscribes crop production in the country very considerably.

Inefficient technique and means of production

One of the main and direct causes of low yield per unit of land has been the inadequate agricultural operations. There has been hardly any improvement in the tools and implements which have been handed down through centuries. The plough that is used is not heavy enough for turning over the top soil properly. The draught animals, the only source of traction power, are weak, underfed and under-sized. As a result land does not get adequate ploughing. Inadequate soil preparation

results in insufficient soil fertility which in turn impedes proper root development. Sowing and inter-cultural operations are based on age-old conventions rather than on knowledge of science. Other implements and tools used by the peasants such as the ladder (moi), rake (anchra), sickle (kachi), trowel (khurpi), are as archaic as the plough. These are being used unquestionably, regardless of their efficiency or inefficiency.

Still detrimental to productivity is the fact that not all cultivators do possess even these traditional means of production. For instance, it was found in 1960 that 35% of the farms had neither ploughs nor any work animals. It was also observed that the percentage of farms without work animals was very high in small farms, as may be seen from the following information on the percentage distribution of farms without work animals:

Small farms (less than 2.5 acres)	59%
Medium farms (2.5 to 12.5 acres)	10%
Large farms (12.5 and over)	2%

The situation was indeed precarious in the very small farms: 90% of the farms of less than 0.5 acre size and 72% of the 0.5 to 1 acre size were found without any work animals of their own. There is no visible evidence to assume that the situation has improved since then; on the contrary, cattle resources have been extensively destroyed by the Pakistani army. The productivity consequences of such a deplorable situation are very

direct - farms without owned animals have to depend on hired ones which may not be available on time; and since agricultural operations are largely dependent on the mercy of nature, timely preparation of the soil is very crucial.

It may be mentioned here in the passing that on the basis of local research a number of more efficient implements have been designed but the Government did not achieve any success in popularising them because of the low financial capacity of the farmers as well as the lack of the required animal power to use them.

Use of poor variety of seeds is another culprit which has caused continued stagnation in crop production. As of 1960, only 1% of the cultivated area was sown with improved seeds. Even in 1969-70 when the highest amount of seed distribution took place, Government sources constituted only 0.5% of the total paddy seed used in the country (see Table 9.6). Nearly all farmers procure seeds from their own annual produce. Due to the lack of necessary knowledge seeds are not properly preserved and hence they lose much of their quality and germination potentials.* Inferior as these seeds are in their inherent properties, they and eventually their plants remain vulnerable to pests and diseases.

* This necessitates excess sowing which is estimated at 70% in paddy, 80% in pulses, 80% in oil seeds and 60% in jute seed implying a loss of about 250,000 tons of cereals, 7,500 tons of pulses and 2,500 tons of oil seeds. See Ahmed, K., Agriculture in East Pakistan, op. cit., p. 128.

Table 9.6 Seed Distribution (in 000 maunds)

Year	Paddy	Jute	Potato
1963-64	51.23	0.98	53.80
1964-65	51.88	1.50	92.00
1965-66	58.30	1.35	71.50
1966-67	61.72	2.66	51.60
1967-68	59.74	2.22	80.34
1968-69	60.00	4.00	54.00
1969-70	72.00	8.50	54.00

Source: Economic Survey of East Pakistan, op. cit., p. 43.

Incidence of pests and plant diseases is by no means negligible. It is estimated that loss of crop due to the normal pest incidence is between 10 to 15 percent.⁵ But unfortunately in the recent past only one-third of the areas under crop received plant protection services from the Government. Owing to the general lethargy, apathy and lack of awareness, the individual peasants are very rarely found to engage themselves in manual plant protection and care. Thus most of the crops are left to survive the attacks of diseases and pests by the invisible hand of God.

Equally responsible for the dwarfed productivity is the widespread lack of plant nutrients. Although the value of plant nutrients is generally appreciated and as such cow dung has been in use from time immemorial, only

⁵ Economic Survey of East Pakistan 1969-70, op. cit., p. 48.

45% of the farmers are reported to be using indigenous manures. Yet those who are using it are not getting the optimum return because the indigenous manure is deficient in quality and not properly balanced - it contains 20% of nitrogen, 1% phosphorus and 1% potash. Obviously the deficiency could be made up if the manures were available in enough quantities. Table 9.7 shows clearly that the nutrients which may be obtained from the available manures from the indigenous sources are far short of the total requirement, particularly in phosphorus and potash. The major sources of indigenous manure are cow dung, oil cakes and kitchen ash, and to a lesser extent fish meal and bone-meal. But, partly due to the shortage of domestic fuel and partly due to callousness of the peasant, only one-fourth of the 50 million tons of raw cow dung available in the country is used for manuring.

There are conflicting demands on the available oil cakes as well. Oil cake is an important source of animal nutrition and as such 50% of the total production is used as part of cattle feed. Similarly wood ash which is the main traditional source of potash supply is not available in the quantity it should be available. Partly due to the unawareness of its value and partly due to storing inconvenience immeasurable amount of kitchen ash is thrown away. Thus, in various ways traditional manuring materials are rendered unavailable in sufficient quantities and the gap between supply and requirement has remained enormous indeed.

Table 9.7 Indigenous Manures available
and Plant Nutrient Requirement
(in 000 tons)

Manure materials	Quantity available	Equivalent value in		
		Ammonium sulphate	Bone meal	Muriate of potash
Cow dung	12000	300	-	-
Oil cakes	73	18.25	-	-
Kitchen ash	31.8	-	-	3.18
Bone meal	3.7	-	3.7	-
Fish meal	0.375	0.15	-	-
Total		336.65	3.7	3.18
Equivalent Nutrients available		63.68 N	0.74 P	1.9 K
Nutrients required		431.46 N	385.86 P	269.00 K

Source: Ahmed, K., Agriculture in East Pakistan, op. cit., Tables 62 and 64 combined, pp. 133 and 135.

In view of the gigantic gap between supply and requirement of plant nutrient on the one hand and the urgency of boosting crop production on the other, the Government programme was conceived in the framework of Western economy and technology - production and distribution of chemical fertilizer was chosen to perform the magic in productivity. Leaving aside the question of the appropriateness of chemical fertilizer as a technology for the time being, one cannot be impressed by the performance of fertilizer distribution itself (see Table 9.8) - the figures are still far below the

required amount,^{*} and the nutrient components (N, P, K) are a long way from being balanced. And for obvious reasons of financial limitations and lack of motivation, only 4% of the farmers reportedly used chemical fertilizer. Even at a recent date (1969-70) the average dose has been no more than 10.5 lbs. of nutrient per fertilized acre, which is perhaps no more than one-tenth of the recommended input.⁶

Table 9.8 Distribution of Fertilizer
(in 000 tons)

		1960-61	1963-64	1966-67	1969-70
Total Fertilizers		65.92	111.72	169.93	300.00
Total Nutrients		23.72	49.50	77.76	134.40
NPK Ratio	{ N	100	100	100	100
	{ P ₂ O ₅	15	36	28	32
	{ K ₂ O	5	7	9	13

Source: Economic Survey of East Pakistan 1969-70.

It has been discussed earlier that the existing hydrological constraints affects landuse and productivity very seriously. In 1960 only 7% of the cultivated area

^{*} It is by no means suggested here or anywhere else in this text that the production and distribution of chemical fertilizers should be stepped up or the farmers be encouraged to use chemical fertilizer in full scale, for, it will be shown later, chemical fertilizers are not un-mixed blessings - they create a dangerous cycle of ecological problems, doing more harm than good in the long run particularly if they are used injudiciously.

⁶ Mr Ahmed recommends 103.5 lbs. of nutrients per acre; Ahmed, K., op. cit., pp. 133 and 138.

were reportedly irrigated by indigenous methods.* By 1969-70 only 4% of the cultivated area has been brought under regular irrigation by Government irrigation projects; the emphasis being on low-lift pumps which are imported by the Government and paid for by the peasants. It is also claimed that about 10% of the cultivated area has been protected against the ravages of flood. Nevertheless, the achievement is far from the requirement and as such the Government has a long way to go particularly in view of the fact that protective water works are beyond the capacity of individual peasants.

Lack of supportive actions from the Government

From the foregoing discussions it should be reasonably clear by now that while a number of Asian countries have already adopted 'green revolution' as the sole strategy of basic development, agricultural sector in Bangladesh remained neglected in spite of its dominant position in the economy. Agricultural production remained dependent by and large on the vagaries of nature. Investment in agriculture was disproportionately small. On the contrary,

"It was subjected to very heavy concealed taxation in addition to the moderate direct taxation of land and some less than successful attempts at taxing higher agricultural incomes."⁷

* The methods may be described as manual lift irrigation with traditional equipment like the Swing Basket and the Water Scoop locally called 'donga' or 'doan'. Water scoops are rather expensive while the swing baskets demand back-breaking labour. Both the methods are time consuming.

⁷ Khan, A.R., op. cit., p. 38.

In addition to the initial drawbacks, 66% of the investment allocations in agriculture in the public sector were utilised in the Third Plan period (1965-70). In the private sector, fixed investment in agriculture during the same period has grown only at a progressively declining rate. Admittedly, this is one of the most disappointing aspects of the Third Plan performance.

While private sector investment can in no way be expected to perform the herculean task of agricultural development in Bangladesh, public investment has remained ever so scanty. As a result all aspects of agricultural development programme have remained at a very insignificant level. Government farms provide only a microscopic fraction of the total seed requirement. Hence in spite of the promises of the high-yielding varieties more could be tried in the scale of Aus or Amon crops. Besides, the high-yielding varieties have not yet been adapted successfully to the local environmental conditions. The newly established Rice Research Institute is almost entirely engaged in the trial of the imported varieties only. While it is absolutely indispensable to concentrate resources and efforts on water management and control in order to achieve the required agricultural output, the original allocation for water and power development was reduced by more than 3% in a revised allocation of the Third Plan. Subsequently Annual Development Programme in water was curtailed by more than 6% between 1968-69 and 1969-70. Still worse was that only 66% of the

allocation in the water sector was utilized in the plan period.

In Chapter 8 we have seen that in the face of desperately needed loans Government sources provide only 10% of the total requirements. The guiding principles of the rural credit institutions have always been to satisfy the minimum needs of a large number of applicants, with the result that very few people are really adequately financed. Usually, access to Government credit is very difficult - loans are granted very late or at times of distress only. As the credit sources are only meant for exigencies or alternatively for the influential farmers only, the deserving peasant's needs are not catered for, however worse his budgetary position may be. Furthermore, there is a built-in disincentive in the institutional loans. For instance, the interest charged by cooperative credit, the largest of the institutional sources, is 9% while interest rates charged by commercial banks vary between 5% and 7.5%. But ironically, the rural peasants are not credit worthy to the commercial banks and hence are denied of any service.

Cooperative movement though not new in the country has lost its essential spirit and purpose. Cooperatives are now wrongly conceived and organized. The registered cooperatives are mainly used as official agencies with all the bureaucratic paraphernalia for dispensing rural credit. Vested with bureaucratic initiative, these are patriarchal in character and function and, as such, divorced of

indigenous local participation. Thus cooperatives are now primarily a credit movement, contractual in operation as opposed to the spirit of cooperation, self-help and mutual aid.* Worse still, uneducated, unmotivated poor peasants are encountered by a very small number of co-operative workers/organizers.

In spite of the official claim that major emphasis has been given to strengthening the existing extension services in agriculture, such services have remained nominal. It is perhaps true that by 1969-70 as many as 46,422 Rural Demonstration Plots were established on the farmers' holdings all over the country; but since each extension worker (Union Agricultural Assistant)** with some secondary education and a smattering of agricultural training, has to cover an area of 10 to 15 square miles mostly on foot or by 'dinghi', the pace of home/farm visit is very slow, inadequate or none at all.*** The

* The Cooperative Credit Societies' Act of 1904 envisaged an organization of rural based credit societies for channelling loans, farm equipment and tools to the peasants. These were meant to be Unions wherein people of humble means could unite together on the basis of equality for the promotion and protection of their economic and social interests. These were further intended to inculcate the habits of thrift, self-help and mutual aid.

** The bottom level of agricultural services is the Thana unit, which has one Officer (an agricultural graduate) and about 10 extension workers to serve more than 30,000 agricultural families. The number of extension workers increased from 5,442 in 1960-61 to only 6,049 in 1968-69.

*** The author has personal experience of living with an extension worker for six weeks during a busy sowing season (March-April). During this period the extension worker was not found to have visited a single farm, because it was "too hot or too far for him".

agricultural information service has some technical personnel only at the Divisional level (three levels up the Thana). There is perhaps no more than one monthly and one quarterly publication on agriculture with a circulation of 20,000 copies.

Apparently education and training have been regarded, on principle, as an investment in human capital in order to raise productivity, but the focus has been misplaced. An analysis of the plan allocation on education in the Third Plan reveals that a vast section of the coming generation of labour force was to be prepared for the urban markets, e.g. engineers, architects, technicians in industry and other urban/industrial vocations, whereas there was no commitment for the development of education in agriculture or the related fields.

At the root of all shortcomings was the approach of the public policies and strategies which evidently were wrong in terms of priority. Planning activities in the country commenced from 1955 in a sequence of five-year Plans. Ever since planners kept the people well fed with high hopes - self-sufficiency in food by 1969, higher per capita real income, more employment, eradication of diseases and illiteracy, etc., etc. Evidently, those have been empty promises. Planning suffered from the chronic bias of industrial/urban development - industrialization at any cost because that is the symbol of progress and the most visible manifestation of

'development'. Planning process started and ended at the top and the subsequent investment allocations were meant for the most visible points on space, i.e. urban centres, on the assumption that benefits of development would trickle down to the lowest strata of social scale and settlement matrix. Since the peasant community is powerless and out of sight, they were not considered a factor to be counted in higher administrative and political echelon. Protection to industries and capital formation was provided by allowing concentration of wealth at the cost of rational production and equitable distribution. Consequently the food self-sufficiency plan at the centre remained a document of aggregated targetry with no feed back from the local level. Inappropriate techniques of resource analysis ended in faulty and incomplete statement of capacities. Disregarding ubiquitous indigenous resources, 'foreign aid' was sought to perform the magic of lifting the plan off the ground and putting it into operation. Wrong priority fixation and inappropriate strategy by-passed the basic problem altogether.

Poverty and ill-health of peasants

Productivity consequences of the shortcomings in agriculture discussed so far has no doubt compounded to an immeasurable extent due to the simple fact of poverty and ill-health of the millions of peasants. The physiological basis of low productivity resulting from the lack

of nutrition has already been discussed in the preceding chapter. It can only be reiterated here that landlessness and near landlessness is the root of the peasants' poor health and dismal economy. Having to hover over the margins of survival, the majority of the peasants cannot undertake risks or experiments with new techniques and ideas. Nor can they put up any more labour in the traditional techniques with their reduced level of physical and mental energy.

The net result of low productivity is more than obvious. Although the economy of the country is predominantly agrarian and food production is the leading occupation of the people, yet the country is unable to feed itself. In recent years rice production averaged at 10.6 million tons leaving a deficit of 1 to 2 million tons of rice every year. In order to meet the food-gap large quantities of cereals had to be imported (see Table 9.9). Shortage of rice and the subsequent costly import inevitably created a rise in the price of rice (6.9% p.a.); as a result the wholesale price index rose by 5.8% p.a. against an envisaged rise of 2% p.a.

Chronic food shortage tended to relegate the issue of jute production at a secondary importance. Consequently jute production remained stagnant. Increasing imports in the face of near static export resulted in a situation of deteriorating trade gap. (Trade gap situation will be examined in more detail later.) It is also important to note here that since the import

Table 9.9

Food Grains Imports
(in 000 tons)

	Rice	Wheat	Total
1960-61	464	234	698
1961-62	206	202	408
1962-63	542	894	1436
1963-64	346	656	1002
1964-65	95	250	345
1965-66	360	529	889
1966-67	432	647	1079
1967-68	308	712	1020
1968-69	236	884	1120
1969-70	500	1100	1600
1970-71	381	898	1279
1971-72	658	1068	1726

Source: Figures for 1960-61 to 1969-70 from Economic Survey of East Pakistan 1969-70, op. cit.

Figures for 1970-71 and 1971-72 have been taken from the Financial Times, London, Dec. 14, 1972, p. 22.

share of food grains has been rising, the share of investment goods is inevitably being reduced.*

Production in other items of agriculture also failed miserably. Production of grain and pulses fell short of the Third Plan target by 10% while the production of oil seeds fell short by 42% of the target. The

* The import share of food grains increased from an average 12% of the total import during 1960-65 to an average 14% of the total import during 1965-70.

position therefore necessitated costly imports.

Equally disappointing were the production in fishery and livestock. While malnutrition and food shortage need to be combatted most effectively, only 54% of the plan target was achieved. Only one-third of the target inland-water-areas was brought under commercial exploitation. Available information on fishery production indicates that the recent production has been less than half of the requirement. Livestock production is perhaps most neglected of all. Due to the pressure on land, fodder production is limited to only 0.38 million acres (1960) and per acre yield of fodder production is very low: 6 tons per acre on which depend as many as 46 livestock units whereas the requirement is about 4.5 tons per animal. It is no wonder, therefore, that during the early 60s there was a shortage of about 7 million animals. In view of the increasing pressure on land, no reduction in the shortage could be expected. The shortage must have been widened beyond any measurement by the carnivorous appetite of the Pakistani army. Poultry production also decreased over the years due to increased consumption, recurrence of epidemics and floods.

The foregoing discussions make it amply clear that productivity in agriculture in Bangladesh had been languishing in the past decades due to many unfavourable physical, social and economic factors working in combination and reinforcing one another. Failure in the largest and the most vital sector of the economy

inescapably led to a drag in the overall growth of the economy. Undeniable as it is, the failure has been acknowledged by the erstwhile Planning Department.*

Performance of the major industries during the Third Plan was equally unimpressive, although sectoral rate of output in manufacturing was much higher than that of agriculture (see Table 9.10).

Table 9.10 Third Plan Targets and Production
in Major Industries 1969-70
(in thousand tons)

	Plan Target	Estimated Production	% of Target achieved
Jute manufacturing	768	620	80.7
Cotton textiles (spindles)	(1,300,000)	(700,000)	54.0
Cement	2,000	72	3.6
Sugar	230	90	39.1
Fertilizer	460	40	8.7
Steel ingot	300	55	18.3
Paper and Newsprint	130	83	68.5

Source: Economic Survey of East Pakistan 1969-70, p. 10.

Low productivity in agriculture has had severe consequences in external trade and balance of payment situation, as well as in domestic savings. These aspects of the economy, more than others, need close

* Evaluating the achievements of the Third Plan it was admitted that much of the failure of the economy to attain the overall growth target is due to a less than satisfactory performance in agriculture. Economic Survey of East Pakistan, 1969-70, p. 41.

attention, for it is obvious that a country's balance of payment situation and its internal savings are crucially important for any progress at all.

External trade and balance of payment

During the Third Plan period the total export to Pakistan and other foreign countries amounted to Rs. 11,750 millions while the total import from the same channels totalled Rs. 14,690 millions signifying a trade gap of Rs. 2,940 millions, which in fact is 61% higher than that of the Second Plan period (see Table 9.11). The trade picture also reveals that the balance of payment situation deteriorated more seriously during the later half of the previous decade. There is a very complex story behind this miserable facade.

Early in the decade there was a meagre surplus in foreign trade. But there was a jump in import of commodities in 1960-61 and the surplus was wiped out. From then on trade deficit deteriorated progressively. Export was expanding but much below the level of requirement. Major contribution to the growth of foreign trade came from jute and jute-goods but the share of raw jute in the total export declined sharply from 67% in 1964-65 to about 47% in 1968-69 and further below in 1969-70. The decline in the quantum of raw jute export was due mainly to two reasons: (a) on the one hand production of jute fibres failed to increase; (b) on the other,

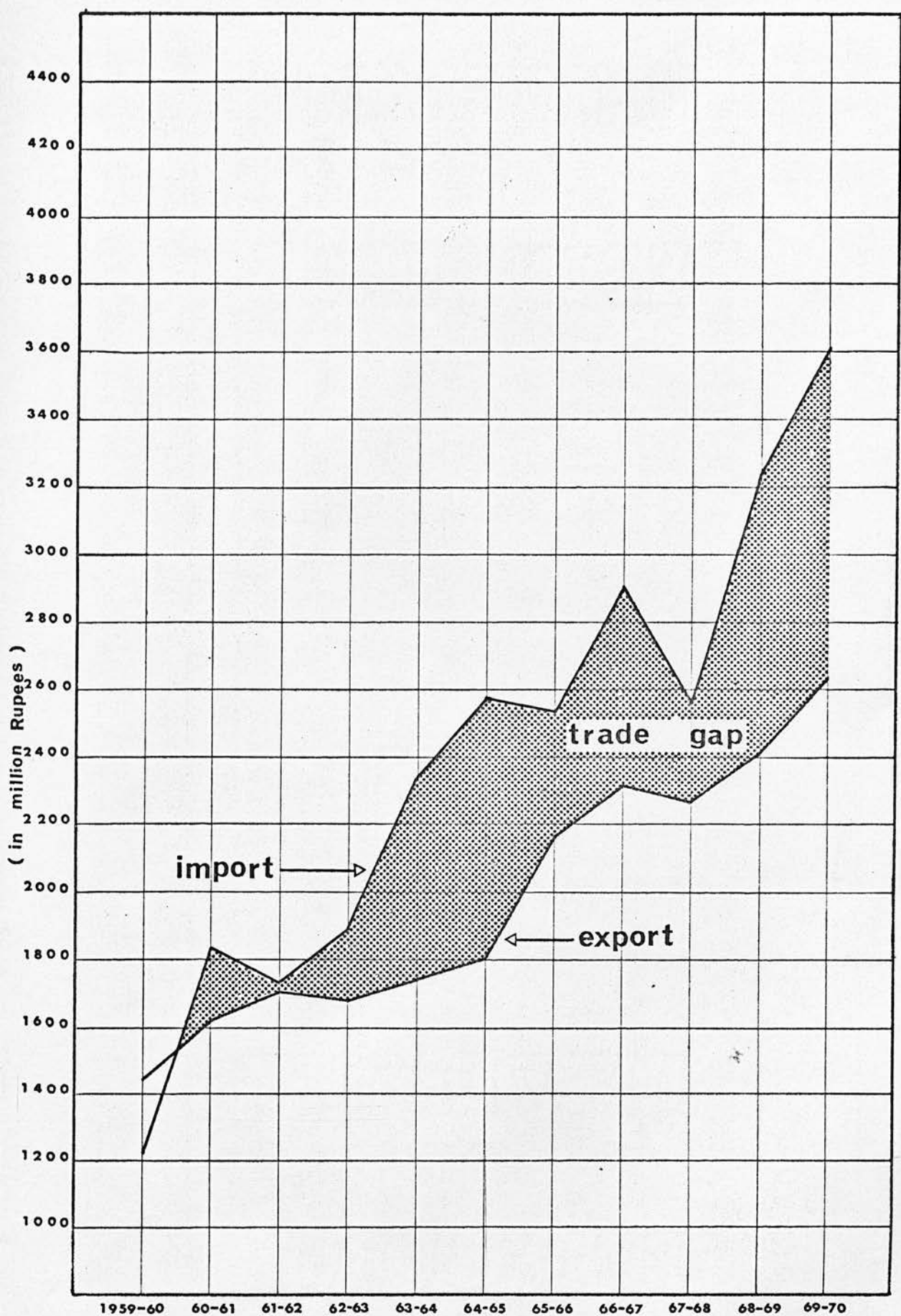


Fig. 9.3 Balance of Payment Situation

fiscal and trade policy^{*} pursued by the Government of Pakistan worked against the comparative strength of raw jute in the world market, while at the same time encouraged increased processing of jute. Thus while the world market for jute fibres expanded, Bangladesh's share in world market dwindled from a near monopoly to less than 50%, reflecting a sheer indifference in capturing the market opportunities in spite of obvious comparative advantage in production. Moreover, due to a fall in the price, growth in the export proceeds from jute remained low in spite of the increase in the volume of the export.^{**}

There are many other deplorable features worth mentioning in the trade picture of Bangladesh, particularly in her regional trade with Pakistan. Trade pattern with Pakistan during the period under review bears the stamp of a progressive dependence of the economy of Bangladesh on that of Pakistan. Increasing food gap in Bangladesh during the period led to increased reliance on import of food grains from Pakistan which was facilitated by the latter's breakthrough in food production (Mexi-Pak wheat)

^{*} Raw jute export was subjected to tax while manufactured jute was blessed with the privilege of import entitlements called bonus vouchers which were marketable freely at a fabulous price. This was a two-way benefit to the entrepreneurs in jute manufactures. For further details of this point see Khan, A.R., *Economy of Bangladesh*, op. cit., ch. 8.

^{**} Between 1964-65 and 1969-70 export proceeds increased by 100% while the quantum of export increased by just over 143% in volume.

and the subsequent surplus in food to be disposed of in the ready market of the former. On the other hand, tea, the second biggest export of Bangladesh, was diverted from the world market to that of Pakistan through an artificially created unfavourable rate of exchange along with an imposed export limitation. Paper from Bangladesh also ended up in the same way.

The biggest single item of import from Pakistan was cotton textile which again was designed by a deliberate policy aimed at fattening the growing textile industry there at the cost of keeping Bangladesh extremely deficit in cotton textiles.

Against the expanding volume of import from Pakistan export of jute manufactures and tea to Pakistan was slowed down during the period. Thus the deficit in regional trade with Pakistan became overwhelmingly large.

The superimposed emphasis on manufactures for export replacing raw commodities like raw jute, hide and skin, created crippling diseconomies for Bangladesh. The industrialists and entrepreneurs started getting unfairly big shares of the export earning and thereby increasing control over the export sector of the economy. Worse still was the fact that Bangladesh was getting impoverished through various mechanisms of net resource transfer. Since most of the entrepreneurs were (West) Pakistanis, they shifted the export earnings in order to industrialize their home territory at the cost of the eastern wing of then united country.

One more unfortunate feature of the trade pattern of Bangladesh needs to be pointed out. In 1964-65 about 56% of the total imports was accounted for by the investment goods (cement, machinery, equipment, etc.), in 1968-69 their share declined to 49% and is estimated to have been even lower in 1969-70. The share of food grains on the other hand showed an upward trend - the average for the period under review being 14% as compared to 12% of the Second Plan period. The need for increased food imports created a serious drain on the limited foreign exchange resource.

Before leaving the discussion, a few more remarks may be added in order to establish that widening trade-gap is an existing reality and not a sentimental visualization. It is true beyond an iota of doubt that the effective external tariff as well as the unfavourable rates of exchange had adverse effect on the trade pattern of Bangladesh. It is also true that almost the entire import into Bangladesh was a trade diversion in the sense that had there been no tariff the commodities would be imported from elsewhere. But it has not been shown by the economists whether Bangladesh would be trade surplus if she was allowed to import all the commodities from elsewhere. No doubt Bangladesh would gain more by exporting to other countries, but would not the surplus be washed off inevitably by the increasing volume of imports from other countries? Perhaps it would, because we must not forget that in the first place Bangladesh

has had to import much more commodities than export due to the basic short-falls in domestic production. Leaving aside the obvious fact of politics of resource development that import substitution was not wilfully attempted for Bangladesh, suffice it to establish here that export from Bangladesh grew at a very slow pace in the face of escalating imports. Thus creating a situation widening trade gap (see Fig. 9.3). It must also be noted that the proceeds from export decreased in proportion to ~~the~~^{the} volume; and that export commodities remained undiversified while import expanded over a wide variety of goods.

Savings and aid

The description of the economy and its performance so far should provide enough indication that savings or investable surplus is not a thing to be expected in the Bangladesh economy. Capital inflow through trade was obviously negative. Since foreign aid was tied to Pakistan market and the Central Government bureaucracy, the real value of aid to Bangladesh was only a fraction (one-eighth) of that of Pakistan. Bangladesh being a province of Pakistan so long had a very limited jurisdiction of revenue collection - only land revenue of its own territory. So far as the other sources of revenue and taxes are concerned, she received only a share from the central pool.*

* In addition to the Provincial share, further funds were released from the centrally retained revenue, but only as a loan which automatically created a huge burden of debt-servicing.

The supposed 'accumulative sector', i.e. the modern capitalist sector is very small indeed in Bangladesh, such that it could in no way be expected to offset the enormous vacuum created by the vast non-accumulating subsistence sector. Nonetheless, it is an open secret that the poor subsistence sector in fact had been subjected to a 'squeeze' on the principles of 'primitive capital accumulation'. But most of the savings from the capitalist sector as well as the involuntary saving from the subsistence sector were transferred to build up capital assets in Pakistan. Thus in various ways Bangladesh was left with a very insignificant margin of savings if at all.

The involuntary saving by the subsistence sector, however, testifies one thing: that an ever lowering standard of living people find new levels of adjustment and eke out a margin of savings, though maybe at the cost of adequate nutrition. As a matter of fact it was revealed that the rate of saving in Bangladesh was as high as 12% of the income in rural households and 9.9% in the urban families in 1963-64.⁸ Apparently this 'revelation' has bewildered the economists. Some disbelieved it, others questioned the statistical basis of the estimate. Even after a 'refined estimate' Dr. Khan admittedly was tempted to conclude that the average rate of savings would

⁸ Bergan, A., Personal Income Distribution and Personal Savings in Pakistan, 1963-64. The Pakistan Development Review, Summer 1967.

be in the range of 4 to 6 percent of the income.* The question therefore is not whether there is saving, rather what happens to the savings. The answer is to be found in a sociological enquiry as to how the saving is used. The poor peasants do save no doubt and their saving rate may be as high as 10 or 12 percent of the income, but the saving is not of corporate nature, nor is it motivated by the sense of national purpose. Because of the short life perspective of the common people the saving is done only for the daughter's marriage, son's circumcision (occasionally his education also), or father's funeral feast. Or, alternatively, for other consumption purposes like buying furniture or more clothes or spending on the improvement of the house. The saving, therefore, does not enter the stream of national capital building.

The savings and aid picture of pre-liberation Bangladesh indicate that to a very considerable extent the country had been relying on herself. The fact that the country survived in spite of the lack of capital inflow, that the people saved against the evils of squeeze and that the country moved in the relative absence of

* On the basis of information of 1966-67 where substantial improvements and adjustments were made in defining income, consumption and savings, Dr. Khan estimates that the rate of saving in rural household was 1.12% of the income and that in urban areas was 4.03%. In view of the fact that 1966-67 was a particularly bad year and that Bergan's sample of 1963-64 was unusually affluent, Dr. Khan settled for the average of rates for 1963-64 and 1966-67 which means between 4 and 6 percent. Khan, A.R., op. cit., p. 99.

investable surplus, provide room for optimism in the future prospects of self-reliance.

Post-liberation development efforts

Ever since the liberation planners, politicians and administrators have been sloganing in respect of self-sufficiency in food at the earliest. Once again the Planning Commission has assured that self-sufficiency in food will be achieved by the end of the new First Five-year Plan, i.e. 1973-74 - 1977-78. But will the hope be fulfilled? Prospects are that the promises will turn out to be empty once more, for apparently the planners, decision makers and strategy formulators have not yet been able to free themselves from the legacy of planning of the Pakistani regime. The first two Annual Plans (budgets) by the Government of Bangladesh did do virtually nothing to correct the previous blunders. As a matter of fact the approach in those budgets was not significantly different from that of the erstwhile Pakistan Government. As pointed out by Dr. Ahmed, the first Annual Budget by the Government of Bangladesh reflected 'new priorities and old biases'. The subsequent Second Annual budget (1973-74) bears testimony to the fact that the allegation is not unfounded and that old biases have indeed continued. A comparison of sectoral allocations between the periods before and after liberation makes it amply clear that the previous biases and obsessions have persisted quite noticeably till date (see Table 9.12).

Table 9.12 Proportional Allocations
in Different Sectors
(in percentages)

Sectors	Pakistan Period 3rd Plan ^a	Bangladesh Period		
		1972-73 ^b	1973-74 ^c	1st Plan ^d
Agriculture and Water	25.65	39.23	26.70	24.0
Industries	16.61	9.09	16.77	19.7
Power and Natural Resources	10.24	8.12	10.93	11.7
Physical Planning and Housing	8.22	18.95	17.55	10.1
Transport and Communication	19.75	4.71	5.23	15.9
Education and Manpower	8.19	{ 10.17	{ 15.98	7.1
Health and Social Welfare	4.10			4.7
Family Planning	-			1.6
Government	-	-	-	0.6
Trade	-	-	-	3.8
Miscellaneous Services	-	-	-	0.6
Works Programme/ Rural Institution	7.23	9.68	6.82	-
	100.00%			100.00%

Sources: ^a Economic Survey of East Pakistan 1969-70

^b & ^c Bangladesh Today, London, July 15, 1973, p. 5.

^d Bangladesh Today, London, December 16, 1973, p. 4.

Although the urgency of the development of agriculture has apparently been emphasized with due weight, the share in the development outlay for agriculture is still disproportionate in comparison to that of industry.

This only indicates the continuation of previous obsessions that industrialization should be achieved at any cost. There are several other peculiarities of the first Five-year Plan worth mentioning: a total sum of TK. 10410.9 millions have been allocated for agricultural development through different ministries of which only TK. 4591 millions (44%) have been earmarked to be spent by the Ministry of Agriculture.⁹ Such an implementation policy will necessarily subordinate the Ministry of Agriculture to other ministries and jeopardise the action programmes in agricultural development.

So far as technological selection is concerned, tractor mechanization has been indicated as a choice to the extent that by the winter of 1973 500 tractors and 700 power tillers were to be procured and pressed into service 'as part of the Government's plan to mechanize the cultivation system in the country'.¹⁰ It is only appropriate to point out here that 'mechanization is not socially advantageous'.¹¹ Tractor mechanization can

⁹ A BSS report quoted in Bangladesh Today, Press Division of Bangladesh High Commission, Vol. III, No. 6, Nov. 15, London, 1973, p. 8.

¹⁰ Bangladesh Today, Vol. II, No. 22, July 15, London, 1973, p. 2.

¹¹ Bose, S.R. and Clark, E.H., Some Basic Considerations on Agricultural Mechanization in West Pakistan, Pakistan Development Review, Autumn 1969, pp. 273-308. Bose and Clark /

only reduce man-hour requirement, it cannot increase yield per unit of land by itself. Therefore in a situation like that of Bangladesh where the constraints are land and its yield rather than labour, tractor mechanization will wipe out employment to a suicidal extent. Besides, in view of the price spiral in the tractor-making countries, can the export commodities of Bangladesh be expected to perform the magic of paying for all the tractors and power tillers that will be needed? Still more, will the energy cost^{*} of operating

(Footnote contd. from p. 234)

Clark hold that investment in capital intensive equipment as implied in agricultural mechanization may lead to greater savings in the agricultural sector. For this later argument to hold, displaced workers must be employed productively elsewhere in the economy. Set against these benefits are the indirect social costs of resettling the displaced workers. As might be expected, Bose and Clark found that the cost of housing and other services are so high that they would nullify the most optimistic estimates of the benefits expected. Bose and Clark thus conclude that direct social benefits would be considerably smaller than the direct social costs. Moreover the indirect social costs mainly arising from throwing large numbers of farm labourers out of employment, must be considered much greater than the possible indirect benefits.

^{*} Professor Fred Cottrell has very clearly shown that Japanese hoe-culture produces 50 bushels of rice per acre at the expense of 90 man-days per acre equalling 90 horsepower hours. The same quantity of rice was produced in Arkansas at the cost of 14.1 man-hours, 4.3 tractor hours, 13 truck-hours and 434 kilowatt-hour of electricity for pumping, altogether totalling an equivalent of 806.5 horsepower hours. The comparison makes it evident that the operating energy costs alone ran 9 times higher in machine agriculture in the 50s when the price of fuel was only about $\frac{1}{5}$ of the present price. For further discussion on this aspect of the problem see Cottrell, F., Energy and Society, McGrawhill Book Co. Ltd., New York, 1955.

Other examples of the cost of mechanized agriculture may also be cited. Harvesting wheat with a 'MacCormick Combine' in Oklahoma requires 250 units of fuel energy for every /

and maintaining the mechanization equipment be economically advantageous in view of the sky-rocketing fuel prices and the perpetual energy crisis? What about the consequences of mechanization on social stability? The lesson from the experience of Pakistan is clear that, if anything, mechanization will tend to further concentrate political power and capital assets.¹² Conceivably

(Footnote contd. from p. 235)

every 50 units of crop harvested (measured in BTUs); whereas an efficient Filipino farmer produces 50 units of crops for each single unit of human energy. Cf. A New Look at the Energy Crisis, The Plain Truth, Ambassador College, July-August 1973, Vol. XXXVIII, No. 7.

¹² Gotsch, C.H., Tractor Mechanization and Rural Development in Pakistan, International Labour Review, Feb. 1973, pp. 133-166. Examining the social cost and benefits of tractor mechanization in Pakistan, Gotsch concludes that (i) the effects of mechanization on yields appear to be nominal in a labour-surplus economy; therefore replacement of bullock-power alone is not sufficient to produce net social benefits; (ii) the larger farmers do the innovating; (iii) private benefits outweigh private costs by substantial margin; and (iv) such margins of profits permit landlords to get rid of tenants as well as to capture the full benefits of the recent increases in productivity stemming from improved seeds, fertilizers and water; (v) the feed backs that tractor mechanization brings in its wake like reapers, threshers, etc., distort the social equilibrium further such that, comments Gotsch, 'Pakistan may simply be jumping from the frying pan to the fire.'

In this connection the observation made by Johnston and Cownie is equally educative. In the light of the experience in Pakistan they believe that prescribing all out tractor mechanization is equivalent to advocating development according to the Mexican model, i.e. a farm economy characterized by a dual size-structure with increases in output and commercial sales concentrated in small sub-sector of large-scale capital intensive farm operators. See Johnston, B.F. and Cownie, J., The Seed Fertilizer Revolution and Labour Force Absorption, American Economic Review, Vol. LIX, No. 4, Part 1, September 1969, p. 574.

agricultural mechanization has been opted as a symbol of 'development'. This is clearly an exhibitionist attitude, a heritage so distinctly Pakistani still ardently nurtured.

In the irrigation technology emphasis has again been placed on low-lift pumps which have to be imported at the cost of TK. 10,000 (£500) each at the current price and operated by imported fuel. The issue of improving the traditional irrigation technique seems to have been by-passed totally. While the supply of fertilizer and pesticide has been clearly spelled out as major agricultural inputs, composting and indigenous manuring have not received attention.

In order to boost agricultural production and overall rural development cooperative agricultural system has been emphasized to the extent that a separate ministry of Cooperatives and Rural Development has been created. It has been declared by the Ministry that during the Five Year Plan period 350 thanas out of the total 450 thanas will be covered by cooperative agricultural system.¹³ These are highly commendable moves by themselves no doubt. But what this system is going to be like, what will be the goal and how will it work, is not fully enunciated yet. It has been announced so far that through these cooperatives consumer goods will be supplied to each village and union, at the same time they will channelize

¹³ Bangladesh Today, Vol. II, No. 23, August 1, London, 1973, p. 6.

the idle time of the peasants into profitable subsidiary activities following the Comilla cooperative as a model. Whether the experiment at Comilla has solved the basic challenge and whether Comilla model is appropriate for the rest of the country under the present realities remain open questions. But the more fundamental question to ask here is: where is the basis of co-operation? With what will the peasants cooperate? There can be no cooperation between unequal partners. No cooperative system can work up to its promises when it is composed of landowners and landless peasant workers. Without access to land and the other basic means of production (draught animals, tools and implements), the cooperators cannot be on equal status and footing, and hence their contributions cannot be equally effective.

Obviously the whole question of land reform and land redistribution has been left untouched, perhaps on the plea that the issue has already been settled by the Prime Minister himself by a referendum in a public meeting, and that private holding will have to be allowed as per the East Bengal Settlement Act, 1950, i.e. 33 acres per family. It is more than obligatory on the part of any researcher/thinker on the issue of land in Bangladesh to point out that the accepted land policy has disastrous consequences. The provision allows for a situation where only 5% of the rural families may 'legally' take up all the land of the country, if and when they have the money to pay for it. This is for 1985 - as the years

go by, even smaller percentage of families may happen to be in possession of all the cultivable land in the land-hungry country.

Previous weaknesses are reflected also in the option of mechanism to put the plan into operation. Foreign aid has again been chosen as the vehicle to get the plan going. Of the total TK. 5250 million to be spent in the first year of the Plan TK 3520 million or 67% would be received as foreign aid and external capital involvement in the entire Plan will be 39 percent. Up to March, 1973, the country had already received a total of \$1275.76 million (= £531 million) of which 65% are bilateral, 26.5% multilateral and 8.5% by voluntary agencies.¹⁴ The most obvious question is, when and how can the country be expected to be solvent of debts. The case of India shows that if India had to become solvent quickly, further rise in her export sale would be required in addition to the big increase in exports that is already being postulated in order to reduce her dependence on further foreign capital to finance the investment programmes.¹⁵ Is a continuous increase in export sales possible for Bangladesh with her single export commodity? Even if the country diversifies the export commodities, will there be a favourable ready market while the developed countries are having their market well protected under the shield of

¹⁴ The Times, Aid to Bangladesh, Bangladesh Supplement, London, March 26, 1973.

¹⁵ Shonfield, A., The Attack on World Poverty, Chatto and Windus, London, 1961, p. 28.

tariffs. Weak commodity market makes the proposition of borrowing a perilous one. The past experience during the partnership with Pakistan should provide enough lessons for Bangladesh that foreign aid only increases indebtedness,* kills internal spirit of self-reliance, strengthens 'status quo' and blankets domestic deficiencies. Moreover, in a situation where currency value of the lender country is rising in relation to that of the borrower country which happens to be falling, any debt incurred today is bound to become unbearably heavy in 10 or 15 years time. Obviously, these underlying implications of foreign aid have been ignored.

Such continuation of the previous biases has resulted in the prolonged stagnation in productivity. Commonly it will be argued that production has been severely hampered during the war of liberation. But it is necessary to point out here that the traditional means of production has worked as an 'insurance' against the damages inflicted by the war. Livestock is perhaps the only means of production in agriculture in Bangladesh which has suffered unknown loss during the liberation war. There is, however, no room to speculate that other means of

* On the indomitable belief that foreign aid would pay for itself, Pakistan went on borrowing. By 1970 the outstanding indebtedness had reached \$3149 million or about five times the value of total exports of then united Pakistan. Having been unable to service the debt-burden Pakistan sought a self-disrespectful moratorium. How can Pakistan ever hope to pay the debts when her currency has been devalued by 250 percent in 1972? Under the circumstances financial indebtedness inevitably implies political subservience.

production have suffered any damage which cannot be recovered in a short range of time. No doubt life was violently thrashed by the catastrophic cyclone of November 1970 and again massively dislocated by army reprisal during March and December 1971, nonetheless total production of rice in 1970-71 remained above the average production level of the Third Plan period. It was in 1971-72, however, that rice production fell to the level of the early 60s. The deficit for 1972-73 was estimated between 2.4 million tons to 2.8 million tons. Jute production in the same year totalled 6.5 million bales, a figure significantly less than the pre-war achievement. It is quite conceivable that in view of the critical food shortage, jute production was sacrificed as before; and the critical trade gap has been concealed by the fabulous inflow of foreign aids and grants.

Although food shortage for the calendar year 1973 was estimated at 2.5 million tons, the Planning Commission very optimistically earmarked TK. 1400 million (= £73 million) for the import of 1.5 million tons of food grains for the first year of the plan period, the import break-up being as follows:¹⁶

¹⁶ Bangladesh Today, Vol. II, No. 18, London, May 15, 1973, p. 8.

	<u>million tons</u>
1973-74	1.630
1974-75	0.726
1975-76	0.338
1976-77	0.139
1977-78	<u>0.002</u>
Total import in the First Five-year Plan	<u>2.835</u>

On the other hand, jute production has been estimated at about 5.5 million bales only for the year 1973-74.¹⁷

This signifies a shortfall of 30% in relation to the pre-liberation target of 8 million bales in 1969-70.* Such a performance of jute production is suicidal for the country and its economy. One does not need to be an economist to see that the value of Bangladesh currency (Taka) and the economic prospect of the country depends on her ability to maintain the competitiveness in the world jute market through a stable supply of quality jute.

In spite of the audible alarm that jute is in severe competition from synthetics as well as the bulk-packaging and pre-packaging technology, a remarkable complacence**

¹⁷ Bangladesh Today, Vol. III, No. 1, London, Sept. 1, 1973, p. 5.

* Angus Hone, Research Officer at the Institute of Commonwealth Studies estimates that the level of total raw jute offtake must not fall below 7.5 million bales - see The Times' Bangladesh Supplement: Jute Trade Faces Challenge of New Packing Material, The Times, London, March 26, 1973, p. v.

** On return from a meeting with the President and Secretary of London Jute Association in London, the Finance Minister, Mr. Taj Uddin Ahmed, is reported to have said in Dacca /

is noticed amongst the decision makers in Bangladesh. It is no more a fiction that jute has already lost more than 65% of the 'primary-backing' market in the U.S.; and Angus Hone warns that at the present price level of \$630 - \$650 per ton, will perhaps continue to lose even the 'secondary-backing' market where jute still holds 70% share.¹⁸ The EEC has visibly ditched Bangladesh by imposing 5% duty and quantitative restrictions on jute goods. Consequently Dundee is switching to synthetics or at least planning to do so at the earliest possible.

An air of optimism prevails in some quarters where it is believed that there is a growing demand in the Third World countries as well as the non-EEC countries of Europe including USSR. While these potential markets are yet to materialize, it must be realized that there is a considerable fight at hand. The existence of a formidable challenger, i.e. the synthetics, is no myth. In any case Jute has to be economically competitive and stably available in suitable quantity and quality. The key undoubtedly is held by a rapid and extensive improvement in the yield per acre and a stable supply of jute.*

It is fairly indicative now that the previous

(Footnote contd. from p. 242)

Dacca that jute has a brighter future as its synthetic substitutes could not yet prove to be better than jute in any way. - Bangladesh Today, Vol. III, No. 5, London, November 1, 1973, p. 2.

¹⁸ Hone, A., op. cit., p. v.

* This view is endorsed fully by Mr. A.H.M. Stewart, ex-Chairman, Association of Jute Spinners and Manufacturers, Dundee.

maladies of food-gap and trade-gap are not going to be mitigated soon. As declared, the foremost objective of the plan is to reduce poverty, which according to the planners in Bangladesh requires an acceleration in the rate of growth of national income.¹⁹ The persistent worship of GROWTH THEORY and GNPism has necessitated an emphasis on 'investment planning' and obviously in the most 'productive' sectors like industry and manufacturing where the return is quickest and highest. It is no surprise then that in the First Five-year Plan of Bangladesh industry has received a higher proportion of investment allocation compared to the previous share. Even with a hypothetical higher national income, is it conceivable that the food gap will be covered by the incredibly costlier food imports. In the present age of increasing energy cost, is it not positively conclusive that the countries which had been food surplus so long will stop producing the surplus; or if they do have surplus for the world market, the cost will be undoubtedly prohibitive for a country like Bangladesh.

In view of the existing realities in Bangladesh as well as the world at large, it is now more than imperative to focus our attention to what is to be produced, how it is to be produced and how it is to be distributed. It is to these central questions that the rest of the work will be addressed.

¹⁹ Bangladesh Today, London, Vol. III, No. 8, December 16, 1973, p. 1.

Chapter 10

ENVIRONMENTAL ISSUES

History tells us that the rise and fall of all civilizations has been conditioned by the environmental forces. Erosion or epidemics, volcanic actions or riverine scourge destroyed the seat of civilizations. Slow decline, migration or gradual extinction occurred when man exhausted the productive capacity of his land, stripped his forests and fouled his settlements. The process has often been very slow, almost imperceptible in any particular time, but the cumulative effect is permanently recorded on the face of the earth. A great irrigation complex was based on the Tigris and Euphrates which supported one of the greatest civilizations. The irrigated valleys were the granary of the great Babylonian Empire. Today (in modern Iraq) less than 20% of the land in the valleys is cultivated. Similar things happened in the seat of the great Persian Empire (modern Iran). Much of the ancient irrigation systems of India and China stand filled with silt and hence abandoned. The Rajasthan desert in India was once heavily populated, and (80,000 square miles of it) is largely man-made. In order to support a fantastic population growth vegetations were cleared and more areas brought under plough, and the vicious spiral was set in motion - decreasing rainfall, increasing aridity, increasing erosion, cumulative siltation. In search of virgin areas more areas are

denuded and the process went on. The Rajasthan desert has been spreading at the rate of 0.5 mile per year encroaching approximately 50 square miles of fertile land per year.¹

There are many other examples of man's improvident interaction with his environment which has permanently damaged the habitat. Speaking of Central and South America, Dr. Lamont C. Cole maintains that

"The Mayas...exploited their land as intensively as possible until both its fertility and their civilization collapsed. In parts of Mexico the water table has fallen so that towns originally located to take advantage of superior springs now must carry in water from distant sites."²

The truth is testified by the now unproductive soils of Guatemala and Yucatan, the abandoned seats of the Mayan civilization. The eroded hills of Greece and the Mediterranean coast, and the sands of North Africa and Western Asia bear testimony to the imprudent practices of the Romans.

"In Roman days (comments G.R. Taylor) the granary of the empire was in North Africa, where today the anchors of ships and ruined villas testify to a long-lost prosperity. Even now, the process has not ceased - the Sahara eats up another 30,000 acres every year."³

This is the profile revealed by a global review of

¹ UN Conference on Environment, "Natural Environmental Resources": a paper presented by India, Stockholm, June 1972, pp. 49-50.

² Cf. Shurter, D. and Walter, E.: World Crisis in Agriculture, Ambassador College Press, Pasadena, California, USA, 1971, p. 10.

³ Taylor, G.R.: The Domesday Book, Panther Books Ltd., London, 1972, p. 20.

man-environment interaction throughout the past millennia. In the 'Modern Age' although many scientists raised the alarm of deteriorating environment long ago, it was not until some components of nature started firing back very loud when environmental book-keeping was taken up as a serious academic exercise. Warnings are now being relayed through mass media yet the concept of environment has remained a diffused one in the minds of many, because of the imperceptible nature of the impact of man-environment relationship in the day-to-day life. It is not surprising, therefore, that some delegates in the UN Conference in Stockholm (June 1972) opined that the countries they represented did not have any problem of environmental pollution simply because they did not have many industries.⁴

The current literature on environmental issues have, however, made it sufficiently clear that environment is the larger bio system, namely bio-sphere (or eco-sphere if you like) of which our habitat is a part. When we are polluting our habitat system we are in fact polluting the larger system and thus threatening our own existence. The Stockholm conference came out with the consensus that polluting we are in a myriad ways: the wealthy countries are polluting by car fumes and industrial effluents and

⁴ This view was reflected in the paper presented by the representative of the Government of Iraq. Similar opinions were expressed by a number of University teachers and Government bureaucrats in a symposium in Dacca in 1969 on environmental pollution where the chief speaker was Dr. Lamont C. Cole of the University of Ithaca, New York.

the Third World is polluting in their efforts to cut down the rate of starvation. The case for the Third World is very well represented by the report from India. The Indian report presented at the Stockholm Conference made it unequivocally clear that in India the environmental hazards are being caused by very basic sources - not by the avarice for "more" and "better" but by the simple efforts to lift the enormous masses from the perpetual state of poverty, hunger and disease. However, the simple efforts have, admittedly, been characterized by credulousness and lack of understanding of the interdependence of the various components of the environment as well as the neglect of the importance of environmental order.

What is true of India is conceivably true of Bangladesh also, perhaps more. Geologically Bangladesh is the continuation of the land mass of the subcontinent. Both the countries have shared the same historical and cultural heritage. Historically the undivided Bengal was called the granary of India. At that time nature provided a bounteous harvest. That was the "Shonar Bangla" (Golden Bengal) that was. People poured and packed in and multiplied sharing the bounty. That was the time when this small area supported a very considerable population in very considerable idleness, and lavishness in landuse. In course of time the lavish landuse practices became a built-in part of the culture. The vicious spiral was set in motion. Population started inflating and land

resources shrinking, and yield decreasing. More and more people meant more and more land under the ploughs and under the dwelling structures at the cost of vanishing forests and woodlands.

Evidently, land in combination with water, the only resources of Bangladesh, has been exploited as extensively as possible. Yet conscious planning of the rational utilization of land remained absent throughout the past history. On top of everything else, Bangladesh, having been located at the last end of the Ganges and the Brahmaputra, has been subjected to the accumulated after-maths of land and water pollution upstream for centuries. In the conspicuous absence of any effort at conserving the productive capacity of the land, the positive and negative forces of man-environment interaction has continued unabated. The present situation has conceivably reached a stage which is perhaps much more fragile and vulnerable than the rest of the subcontinent. Let us now survey the supposedly unique environmental problems of Bangladesh and the future that looms ahead.

Social and economic life in Bangladesh revolves around the use of only two basic natural resources: land and water. Yet land is in extreme shortage in the country, even in Asian standard. Bangladesh has 10.7% of the population of the Indian subcontinent but only 3.3% of the land surface. Available land for cultivation per family of six was 2.5 acres in 1961. This gives a per capita distribution of .415 acres in the agricultural

population. The distribution is estimated to fall to .323 acres per capita in 1975 (Chapter 5) compared to .911 acres per capita in India reported in 1972. While in India there is still some room of raising the distribution to nearly 1 acre per capita, in Bangladesh there is hardly any frontier at all. Land in Bangladesh has been extensively used, and the natural vegetation has been exploited to such an extent that only 15.6% of the total land remain under forest cover. Moreover, the distribution is very uneven - most of the forest area lies outside the populous part of the delta.

Assuming that no further encroachment will take place in the reserve forests, the future increments in agricultural population will have to be accommodated within the bounds of land available at present. This raises a number of conflicting issues. The most visible of all will be the vanishing agricultural land and/or vanishing trees at the micro-level. Any increment in population will necessitate more dwelling structures and more homestead areas which in turn will necessitate felling of the trees in the existing homestead areas or digging more ponds in order to raise the platform for new homestead areas, or both. Thus agricultural land ceiling will be dropping unceasingly and trees and vegetation areas will be disappearing. In view of the exponential rate of population growth, the future prospects are chilling. We have already seen (Chapter 6) what has happened to the environment in the last hundred years

when population growth was not so alarming. If the same trend continues, agricultural land and foliage would be disappearing at a very fast rate and anarchic settlement pattern would characterize the environment. The process of injudicious destruction of trees and indiscriminate digging of ponds will lead to permanent loss of resources and at once create the vicious spiral of environmental degradation. For it is well known that trees are not only necessary for timber production, they have more important functions in relation to precipitation, water regime, soil conservation, health and recreation. Destruction of vegetal cover diminishes local rainfall also. For example, in India low rainfall has been experienced in all those regions where forest cover is below 10% of the area.⁵ Loss of vegetal cover has been found to be the main culprit of soil erosion in many parts of India.* In Bangladesh the vicious circle of population growth leading to deforestation has already

⁵ Indian National Report on "Natural Environmental Resources" presented at the UN Conference on Environment, Stockholm, June 1972, p. 35.

* The desert conditions and soil erosion in Rajasthan, Gujarat, Uttar Pradesh, Madhya Pradesh and Punjab have been caused largely by the denudation of forests and vegetal cover. Destruction of Sal forests and the consequent soil erosion in West Bengal have contributed to upset the hydrographic equilibrium, leaving to posterity a prospect of loss of fertility, water logging and deterioration of rivers. For instance, water which should have percolated gradually through the soil of the upper slopes is, reportedly, no longer available, thereby causing the rice crops on the lower slopes to suffer from the lack of moisture - for further details consult the preceding reference.

pushed the forest zones away from populated areas making an uneven distribution. Further increase in population will inevitably make more demands on the trees at the micro-level in the way of land, timber for construction, furniture and firewood. The process of soil erosion might very well be in action undetected, but now in the coming years the fragile balance is sure to be broken. By then the damage will lie beyond repair as has happened in vast areas in India.

If, alternatively, the future population is allowed to intrude on the Sundarbans or the hill slopes of Chittagong the disaster will be equally frightening. So long the Sundarban jungles have effectively protected the population and their land from the destructive sea waves - in its absence man and his settlements in that part of the country will be thrown at the mercy of the cyclonic storms. The painful example lies only next door in the Indian part of the Sundarban. Deforestation of the hills of Chittagong will have much more dramatic effects in terms of erosion and siltation of the entire valley including the port, and the only hydro-electric resource of the country will be stripped of its potential.

The conflict of the future situation is further that vanishing land in the face of dwindling productivity and exploding population will necessitate multiple cropping which is not permissible now due to

precipitational limitations.* Large scale irrigation is therefore imperative which in turn is liable to create such problems as soil exhaustion and erosion.

Again, in order to boost yield per unit of land, conventional agricultural technology will dictate full scale use of agricultural chemicals. But obviously agricultural chemicals are not unmixed blessings. After decades of use, the cumulative effects of those chemicals are now being well recognized. Science has achieved miracles - doubled and trebled some crop yields through plant breeding, fertilizer and pesticides and thus reduced the need for farmland; except that paradoxically** fertilizers and pesticides pollute water and air, kill

* In a preliminary study by Dr. Khan et al. it was found that "the dry season in East Pakistan is of five months duration from November to March, but the soil moisture deficit is experienced for about six months in the eastern part of the country and for seven to eight months in the western part. It is during this period of water deficit that rabi crops are grown, transplanted aman passes through its critical period of growth and the Bhadoi crops (aus and jute) are sown. During this period irrigation is a necessity for not only saving crops from complete failure but also for ensuring better yields." - Khan, F.K. and Islam, M.A., Water Balance of East Pakistan, The Oriental Geographer, Vol. X, No. 1, Jan. 1966, p. 9.

** The paradox was well noted at the 16th FAO Conference (Nov. 6 - 25, 1971). The consensus of the delegates was that in the developed nations where great quantities of chemical agents have already endangered much of the natural environment, the problem may already be "serious". In the developing nations, however, amounts in use are so far relatively small and the need to increase food production overrides all other considerations at least for some time to come. - Ceres, FAO Review, Vol. 5, No. 1, Jan. - Feb. 1972, p. 9.

fish and endanger other species.* Indeed, "the repercussions of these toxic substances," reports Professor Jean Dorst of Paris Museum of Natural History, "are now being felt throughout all nature, from the soil to man himself."⁶ Professor Dorst warns that the long-lasting insecticides produce grave consequences to individuals and populations - since those are non-selective, they kill harmful and harmless species in one stroke, thus disrupting the equilibrium in the biological systems. Similar paradoxes are inherent in the use of chemical fertilizers - chemical fertilizers can stimulate a much greater plant growth and a speeded up consumption of organic matter and humus, but they can neither add to the humus content nor replace it; further, they destroy the physical properties of the soil and its life.**

* There have been numerous fish kills from the use of pesticides in all parts of India, mostly in tanks where rain has washed DDT, Endrin or Aldrin into them from sprayed rice fields or where spray equipment has been washed into streams or tanks. A large fish kill has been reported in Jamuna river of Delhi due to the untreated waste of an insecticide factory located on a drain above the city. See Pant, P., Background Paper No. 3, UN Conference on Human Environment, Geneva, 4-12 June 1971, p. 39.

⁶ Dorst, J., The Age of Agricultural Chemical is Over, Ceres, FAO Review, Vol. 5, No. 1, Jan.-Feb. 1972, p. 31.

** It is well known that humus is the chief ingredient of a healthy soil, and as such the more humus a soil contains, the healthier it is. Humus improves the physical condition of the soil, supports the soil microbes, increases permeability, improves aeration, normalizes the soil's temperature and works as a storehouse of plant nutrients. In humus depleted soil, fertilizer nitrate tends to break out of the natural self-containment of the soil system. The organic matter content and the physical conditions of the soil on /

Other mechanisms of environmental pollution by chemical fertilizer are also fairly well understood nowadays. For example,

"When sulphate of ammonia is used as a fertilizer, the sulphate is removed by hydrolytic action and eventually ends up in the water supply or as insoluble sediments in the drainage reservoirs. Other chemicals used as fertilizer follow the same pattern and add various pollutants to our soil and water."⁷

Many chemicals are picked up by minute forms of life both in plants and animals, and are passed on to accumulate in the successive levels of the biological food chain. These chemicals over a long period of time concentrate in the living tissue which may finally interfere with the reproductive processes of all the species involved in the food chain including man.* Eutrophication of lakes and water bodies in many parts of the

(Footnote contd. from p. 254)

on chemically treated plots decline rapidly. These altered conditions prevent sufficient water from percolating into the soil, where it could be stored for drought periods. These findings were reported long ago when the Missouri Agricultural Experiment Station published the results of Sanborn Field study in 1942. - Cf. Schurter, D. and Walter, E., op. cit., pp. 33-34.

⁷ Schurter, D. and Walter, E., op. cit., pp. 29-30.

*"Some vegetable products in the U.S.," report Schurter and Walter, "exceed the recommended nitrate levels for infant feeding. Research indicates this is usually the result of intensive use of nitrogen fertilizer. In heavily farmed areas, the nitrate level of surface waters and wells often exceeds the public health standards for acceptable water, resulting in a risk to human health from nitrate poisoning." - Schurter, D. and Walter, E., op. cit., p. 34.

Although not much is known of biological concentration of toxic substances through the food chain, food like rice is now being observed as particularly powerful concentrating mechanism. Cf. Pant, P., Background Paper No. 3, UN Conference on Human Environment, Geneva, 4-12 June, 1971, p. 21.

developed world is also believed to have been accelerated by the indiscriminate use of chemical fertilizers, part of which unavoidably runs off into the water bodies and helps a fabulous algal growth in the water causing fish and other forms of marine life to die of oxygen shortage.

In view of riverine Bangladesh and the associated amphibian life style what looms most frightfully is the threat of nitrate and/or DDT pollution of water. In the event of large-scale use of agricultural chemicals in the rain-drenched and inundated country, the rivers and their innumerable tributaries and distributaries, along with other impounded water bodies are bound to be polluted. The whole population will then be exposed to a perilous future - first protein starvation and then collapse of life itself, because contact and even consumption of that polluted water in its raw untreated form will remain unavoidable for the vast majority of the population. No other population in the world could perhaps be under such a direct threat, given the alternative of use of agricultural chemicals.

Other perpetual environmental problems unique to Bangladesh are the tidal waves along the coastal regions and the inseparable process of silting, scouring and braiding along the river courses and their flood plains - both are caused by the free play of natural forces. Being almost at the sea level, the coastal areas as well as the estuarine islands of fresh silt exposed at low water, are extremely vulnerable to cyclones, high tides

often resulting into the on-shore movement of high-velocity wind and water devastating wide areas with enormous loss of human life and property. The average estimated damage varies between 1% to 2% of the GNP but the loss of life and the miseries associated are immeasurable.* What is more alarming is that for some yet unexplained reasons the frequency and intensity of the cyclonic tidal waves is increasing while the problem remains far from being taken up with due earnestness. So far as the future is concerned Dr. Islam warns that on account of sea level fluctuations and the morphology of the coastal region on the one hand and the pessimistic indifference of the local population on the other,

"yearly damages as a result of storms and salt water flooding of the coastal areas will be on the increase."⁸

Due to the uneven distribution of rainfall throughout the entire catchment area of the Ganges-Brahmaputra-Meghna systems covering an area of 600,000 square miles, there exists an unceasing process of silting, braiding and scouring. Particularly in the active flood plains where the alluvium is of recent origin, the major rivers are observed to change their channels quite frequently or,

* In such a calamity that took place on November 12, 1970, about half a million lives were lost, according to popular estimate, the actual death toll will never be known. Loss of livestock and other movable/immovable property were beyond any precise estimate.

⁸ Islam, M.A., Cyclone Hazard and Strategy of Human Occupance, The Oriental Geographer, Vol. XV, Nos. 1 and 2 combined, January and July 1971, p. 38.

alternatively, scour their banks very fast. In 1907, the minimum and maximum width of the channel of Jamuna (lower Brahmaputra) were 1.6 and 6.4 miles respectively which became 3.2 miles and 9.6 miles in 1955.⁹ A more recent source informs that:

"In the case of Jamuna the river bed is as much as eighteen miles wide and...those of the Lower Meghna are almost as wide at lower water."¹⁰

This information provides some idea about the magnitude of the problem, i.e. how fast the banks of the major rivers are being corroded. Although the process of scouring and braiding often compensates in forming new Char land (fresh silt exposed at low water) and levees, the loss of life and property, the cost of rehabilitation and resettlement are immeasurable.

Above all, there is the ever-present danger of the high floods which occur when the peak discharge^{*} of the three great rivers coincide in time. Although people have accepted the inevitability of flooding and fluvial changes and through centuries have adapted to the delta's amphibious environment, the high floods caused by sudden and high run off are beyond their capacity to cope with.

⁹ Rashid, H., Morphology of Jamuna Flood Plains, The Oriental Geographer, Vol. X, No. 2, July 1966, p. 70.

¹⁰ Johnson, B.L.C., South Asia, Heinemann Educational Books Ltd., London, 1969, p. 112.

^{*} The erstwhile Commissioner of Water Development holds that a flood discharge of the Ganges of 3,000,000 cfs would be a reasonable expectancy and a large flood flow in the Brahmaputra could be over 3,000,000 cfs. See Abbas, B.M., Control of Floods in East Pakistan, The Oriental Geographer, Vol. VIII, No. 2, July 1964, p. 106.

It must be mentioned here that the frequency of the high floods is also increasing due to the gradual shallowing of the river beds and increasing siltation. During the last two decades the country has been subjected to at least five severe floods, each time inundating about 10 million acres of crop land which is nearly half of the cultivated area and hence source of food for nearly half of the entire population. The recurrent high floods are proving utterly disastrous to the life and economy of the people as well as the country involving widespread damage to standing crops and livestock, public and private property, followed by large scale hunger and epidemics.

Yet, unfortunately,

"...it is difficult to visualize an enduring and effective control of flood within East Pakistan in the near future,"¹¹

opined Mr. B.M. Abbas, the erstwhile Commissioner of Water Development. Similar views are held by Professor Johnson who commented:

"The courses of the great rivers within East Pakistan lie in deep alluvium and carry such enormous quantities of water when in spate as to defy economic control to protect the delta against flood."¹²

Obviously the problem cannot be tackled within the political boundary of Bangladesh since only about 8% of the catchment area of the big river-systems lie within Bangladesh and the rest happen to be in the riparian regions of India, Nepal and Tibet. Besides, according

¹¹ Abbas, B.M., op. cit., p. 110.

¹² Johnson, B.L.C., op. cit., p. 108.

to the assessment of Mr. Abbas,

"there are no suitable reservoir sites on these rivers wherein substantial quantities of their flood flows could be impounded with a view to regulating the discharge. Such storage sites would be available in the upper reaches of these rivers which lie in India, Tibet and Nepal. These rivers can be harnessed and their floods controlled if there is cooperation from these countries in undertaking basin-wide study and putting up joint effort in implementing flood control works."¹³

One more vital area where the process of ecological imbalance has proceeded unabated is the wanton killing of birds and wild animals by trappers, tamers and hunters. Economic hardships have tempted increasing numbers of trappers to indulge in indiscriminate trapping of birds for selling into the gluttonous urban markets. There is no doubt that the flocks of migratory birds that used to appear seasonally in Bangladesh are fast decreasing. The indiscriminate shooting sprees of the local hunters have brought some of the indigenous species to near extinction. The international prodigal demand for hides, skins and furs have taken a heavy toll of some very rare species of wild life in Bangladesh like the Royal Bengal Tiger and the Spotted Deer.

It is worth recalling here that wild life serve three major functions in the ecosystem: (i) they are a necessary (when in correct proportion) component of the total bio-system of the planet; (ii) they are primary indicators of change in the environmental quality and therefore an alarm system to us; and (iii) with

¹³ Abbas, B.M., op. cit., p. 110.

provident practices, they provide a perpetual source of food, and, lastly, they provide immeasurable aesthetic amenity to man. In Bangladesh, extermination of wild birds and animals has visibly disrupted the ecological balance. As a result of the breakaway from check and balance by the natural enemies amongst the species, what have obviously multiplied are the mosquitoes and ants, termites and caterpillars, locusts and moths - the species that are harmful for man and his crops. Yet the country seems to be least aware of this problem and its ramifications are far from being understood. Cumulative destruction of natural vegetation and extermination of wild life is on the ceaseless march.

Apart from the special environmental problems discussed so far, the general problems of the environment in a conventional sense are more or less the same in Bangladesh as in the other parts of the subcontinent, or, for that matter, any other Third World country of the sub-tropics. Poor sanitary conditions prevail in the entire rural areas, a factor which can be directly correlated with the incidence of diseases. There is no man-made system of domestic drainage such that human excreta from the open pit privies and other domestic sewage mixed with rain-water collect or seep into running or impounded water bodies, or stagnant pools where disease-causing microbes multiply vigorously. Water supply for all domestic purposes including drinking in the rural areas is mainly from ponds,

canals and rivers, uncovered dug-wells, and only occasionally from tube wells.* Dug wells are rarely protected from surface drainage or sub-surface seepage. Water drawn for domestic purposes from the same sources where cattle and clothes are washed, are not uncommon. Thus water supply in most instances, whether from surface or sub-surface sources, is bacterially polluted.** In addition to this general water quality, the water in the southern part of the country including the estuarine islands is brakish and saline.

In larger cities like Dacca-Narayanganj, Khulna and Chittagong as well as in some second order towns there is usually a public water supply. But due to the low economic capacity of a considerable section of the urban population, many are deprived from the privilege of individual water connections, and hence a long queue in the public taps aggravating the possibility of transmitting the communicable diseases. The public water supply system is shut off at various times of the day, thus rendering the mains vulnerable to seepage from the surface and sub-surface drainage. In many cases water is only nominally treated and routine bacterial or

* Altogether the country has a total of 166,955 tube wells (of which 24,788 are choked up); people usually abhor the taste of tube well water.

** This statement is based on the author's personal experience while working in a team of epidemiologists for the Pakistan-SEATO Cholera Research Laboratory in 1961-63. The team visited many remote parts of the country carrying epidemiological studies including investigations on the bacteriological quality of water.

chemical examination of water samples from the supply tanks is uncommon. Often these municipal waters sting with the smell of bleaching powder or chlorines. In any case there is no assurance that the water is safe.

Underground sewerage system is totally lacking in almost all the urban areas; even the capital city, Dacca, did not have it until very recently, yet the newly installed system only covers the newer part of the city. The old city still has the service latrines and the newer city beyond the municipal boundary depends on septic tanks. The rest of the towns have service latrines and the newer constructions perhaps have their own septic tanks. The night-soil collected from the service latrines are invariably dumped in an open ground outside the town boundary (but still within populated areas) or, alternatively, discharged in the river flowing nearby. Thus contaminating the river water for the entire population living downstream. The cumulative effect of such a process is obviously unthinkable. One of the Background Papers from India for the Stockholm Conference, 1972, shows the process of progressive deterioration of water quality as the river flows down from one city to the next. A glance at the following table will provide an example of the nature and extent of such a process of cumulative pollution of rivers:

Quality of Jamuna River
(From Delhi to Agra)

	Delhi	Okhla	Malhura	Agra
BOD (5 days) 20°C mg/l	2	5	9	12
Cl, mg/l	18	46	111	140
SO ₄ , mg/l	29	44	110	112
Nitrates as N mg/l	0.8	1.3	2.1	3.8
Coliform, MPN/100 ml	150	24000	84000	240000
Enterococci MPN/100 ml	21	1500	46000	150000

Source: Pant, P., Background Paper No. 3, June 4, 1971, UN Conference on The Human Environment, Geneva, 4-12 June 1971, Table 4, p. 10.

In the absence of any such studies in Bangladesh, what is happening to the water quality of the Ganges, which traverses hundreds of miles of the most densely populated parts of India before entering Bangladesh, remains a matter of educated guess. The real truth must be horrifying.

Needless to mention here that water quality, sanitation and public health are interrelated - the public health situation in Bangladesh bears testimony to this. The country has experienced disastrous epidemics of cholera and smallpox. The endemicity of malaria has drastically reduced but not yet completely eradicated, while gastro-intestinal diseases are widespread in endemic form. Typhoid fever is deemed to be widespread also, particularly among infants and children but most cases go undiagnosed and hence unrecorded. Kalajar

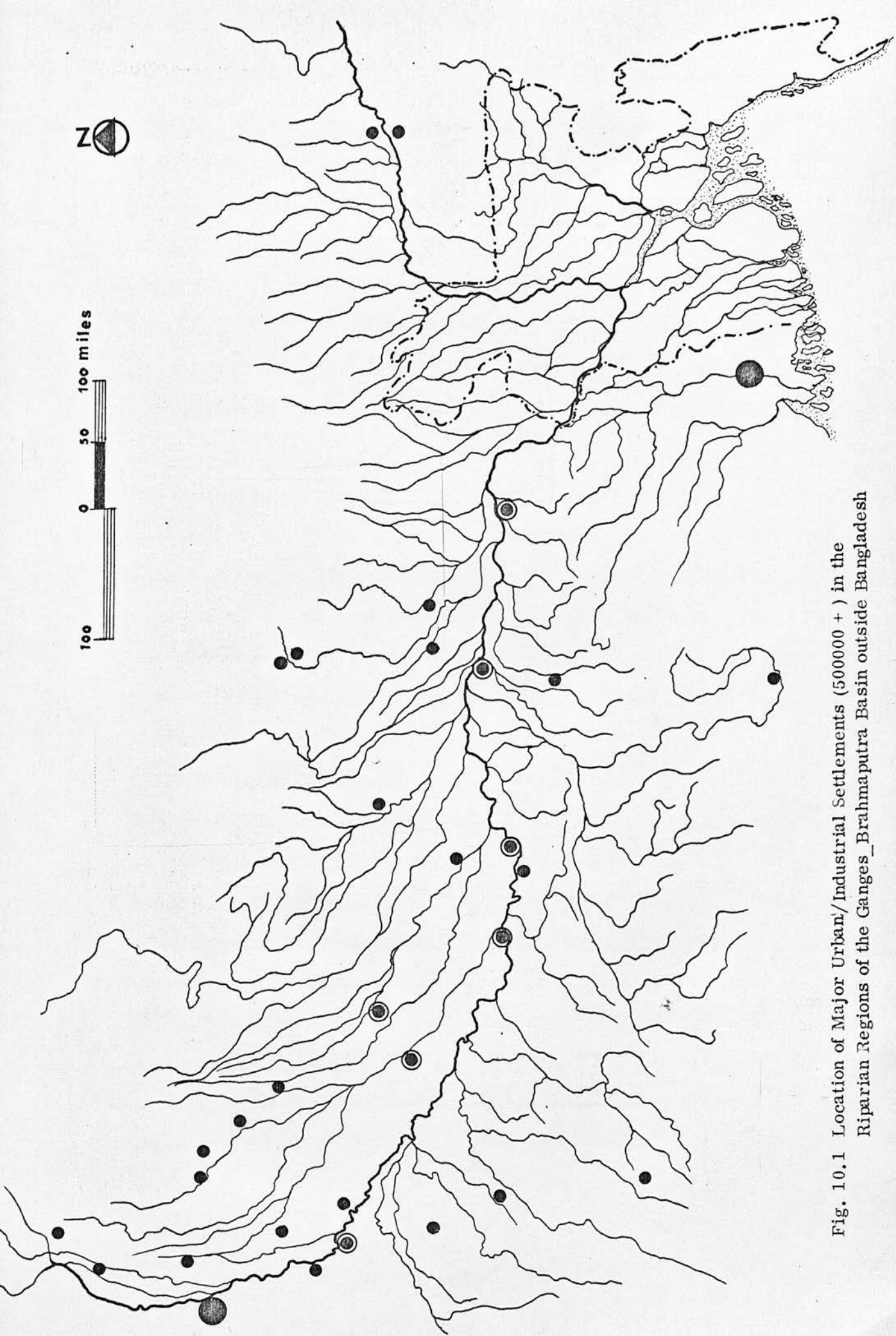


Fig. 10.1 Location of Major Urban/Industrial Settlements (500000 +) in the Riparian Regions of the Ganges-Brahmaputra Basin outside Bangladesh

(black fever), dengue, hookworm and roundworm, tetanus, etc., are few other common diseases related with impure water supply and insanitary environmental conditions.

Report of deaths from snake bite is quite common.

Untidy surrounding of the homesteads and the prolific growth of unwanted bushes in and around the dwelling houses are mainly responsible for such mishaps.

Focussing our attention on the urban environment we find still some more peculiarities, perhaps not so much in the context of the Indian subcontinent. Since the urban settlements in Bangladesh are not the product of industrial economy, the roads and transport facilities were basically designed to serve small groups of population living close together in an environment dominated by pedestrians, hackney carriages, bullock-carts and push-carts. The same road system is being taken over by ever increasing number of cars, trucks and buses. The result is severe congestion of varied elements of traffic,^{*} travel delay and hazard.

Parallel to this, is the gargantuan problem of urban housing, sanitation and public health services, as already indicated. Shanty localities and squatterments without any drainage or sewerage facilities are the typical living

^{*} A resident of London or New York who has knowledge of congestion of people and automobiles, cannot conceive of the congestion referred to here. The congestion here is made up of people including 'street urchins', cars, buses, trucks, bullock-carts, hackney carriages, push-carts, bicycles, rickshaws, stray animals, hawkers and peddlers, all moving at a variety of speeds.

environments of thousands of labourers and workers. Dacca-Narayanganj and Khulna suffer from the recurring attacks of cholera, a deadly waterborne disease.

Besides, food-supply in the big urban settlements are neither regular nor ensured. Lack of steady surpluses in the rural areas, and still, lack of fast transport hinders steady supply of food. As a result food prices go up and the quality of food goes down in the way of adulteration or decomposition. Diseases associated with the quality of urban food has become a matter of common discussion.

Summing up, it can be unhesitantly stated that the environmental quality of the urban centres is appallingly deficient. The threshold in utilities and services has long been crossed. It is beyond the capacity of the city governments to keep pace. The minimal municipal services that exist, do not extend beyond their administrative boundaries whereas the natural settlements stretch far beyond those boundary lines. In view of the present inadequacies, the future appears to be absolutely numbing. If the urban population is to increase from 5.5 million in 1971 to 27.5 million in 1985 and to 55.0 million at the turn of the century, and if the current strategy of polarized urbanization is to continue, then Dacca-Narayanganj, Khulna and Chittagong will become the monument of disgrace of urban civilization. The 'problems of Calcutta' which, according to popular stereotype, is the most appalling in the world, will be belittled in the

light of the problems of future Dacca or Khulna. And obviously the country will not have mopped up enough surpluses by 1985 which could be hoped to be invested to remedy the urban miseries, particularly when food problem, the most basic of all, is yet to be solved. Conceivably, an adequate provision for the projected urbanization will demand such a staggeringly high proportion of the national income that all other priority programmes will have to be sacrificed - a proposition which can never be rationalized with a sane mind and democratic commitment. The alternatives to choose from are therefore clear: (a) whether to encourage conventional path of polarized urbanization or (b) to decentralize and disperse urban type economic activity throughout the spatial structure of the country.

Another peculiarity of the urban environment which was pointed out in Chapter 8 is that there is too much low-lying land in and around the urban places including the big cities. This problem needs further analysis because it has wider ramifications in the overall environmental management. Owing to the low elevation and deltaic physiography of the country, the physical environment even at the micro-level suffer from the persistence of frequent depressions and natural drainage channels. The problem is encountered formidably in Khulna and Dacca-Narayanganj urban region, not to mention other medium-size and small towns. Chittagong is however free from this handicap, but, on the other hand, is dotted with hillocks and mounds. Both these physical handicaps are creating

a very complex set of problems in environmental management. For the obvious reasons of economy in money and effort, those difficult areas of depressions and mounds were by-passed, thus initiating the sprawl encroaching upon valuable agricultural land. Later on, rules of land economics dictated the private developers to take up the difficult areas - depressions are filled and mounds/hillocks levelled. Except in Chittagong, land-filling in the city area is being accomplished by excavating a nearest possible suburban or rural site, thus permanently damaging the resource for agriculture. Yet the sprawl is not halted. Due to lesser land value at the periphery, the groups with smaller monetary resources are being pushed to settle farther and farther away from the central city. As has been shown earlier (Chapter 6) the process increases the per capita cost of utilities and services and finally makes it impossible for the city authority to extend the services at all. Thereafter the incremental population remains unserved. The process is obviously cumulative, and as such the burden of provision of urban utilities at any future date is getting heavier and heavier still.

All these are due to one phenomenon: polarization in the process of urbanization. Although there has not yet been any quantitative stock-taking regarding environmental degradation, certain evils are obvious:

(a) vanishing agricultural land under several accounts, e.g. dwelling structures, brickfields and excavations for central area filling, (b) choking up of natural

drainage system due to injudicious filling^{*} by private developers, (c) declining per capita utilities and services on the one hand and increasing per capita cost of any probable future installation of utilities on the other; and last but not least (d) vanishing natural amenities in the city scape, e.g. disappearing streams and other water bodies, hillocks and meadows.

It does not take much wisdom to appreciate the cause of the urban environmental deficiency - the pressure of population concentration is much beyond the capacity of the urban governments to cope with. The lesson here therefore is clear and simple: "proportion population to potential".¹⁴ This calls for abandoning the strategy of urban polarization and a fresh policy of population redistribution and regrouping tailored according to the capacity of the individual settlement units. Unless polarization is halted and the tendency of concentration on limited points on space is liquidated, greater environmental hazards will build up and the supposed 'generators of growth', i.e. the growth poles, themselves will be

^{*} The problem has already become so acute in Dacca that a monsoon downpour for a couple of hours instantly floods the built up part of the city. The aftermath of levelling the hillocks as well as earth filling in Chittagong is yet to be felt. Nevertheless the impact is not beyond the range of apprehension.

¹⁴ The expression is borrowed from E.A.A. Rowse of the Planning Research Unit, University of Edinburgh. Professor Rowse disseminated the message several decades ago, and the concept was meant to operate at different levels starting from the sub-regional and regional to trans-continental levels.

strangulated soon by their own limitations - urban stagnation and virtual decay will become inevitable. Thus the whole purpose of urban development will be defeated and the goals frustrated.

The urban centres will still need to be protected from decay through functional linkage with their immediate hinterland so that they can be supplied with the life-sustaining requirements from the hinterlands. Conversely the rural settlements also will need to be lifted from their isolation and deprivation in order to avoid rural exodus and the consequent urban influx. Given a system of give-and-take on equitable terms, the pressure on the individual components of the settlements, the town or the village, will be eased. Clearly, therefore, the entire national settlement system must be planned and reorganized in one stroke so that the wasteful processes are precluded, conflicting processes resolved and the threat of environmental disaster minimized. And through a process of continuous monitoring, environmental stabilization can be maintained at a satisfactory level. This is the key to successful environmental management in the context of settlements in Bangladesh.

Referring back to the issue of demographic pressure versus probable technological choice and the concomitant effect on the national habitat system, it must be made clear here that the challenge of the day is to resolve the contradictions between environmental good and what may turn out to be harmful practices. We must remind

ourselves that the ultimate test of any civilization and all the cultural practices that go with it is whether it contributes to the improvement of its people at present and in future. Our welfare and that of the future generations is determined by the way we manage our resources. Passing on the cost of short-term gain to the coming generations is in fact living off environmental depreciation. Alarm about the environmental degradation in the west has raised serious doubts about the consequences of all technological progress. We must learn anew that healthy way of life and economic activity is not inescapably in conflict with healthy earth and environment. Here the choice of technology is crucial. It has now been acknowledged throughout the West that technology in its appropriate form is indispensable to provide the means for reversing environmental damage or protection to not yet damaged components. Luckily Bangladesh is not yet entangled in the web of 'modern technology'. It will be crucial in the future of Bangladesh to introduce technology with greatest caution in order to avoid undesirable problems.

The environmental degradation resulting from the lack of ecological foresight, inefficient and ill-chosen development technique which does not leave any choice for their usability to the future generation, is the most irresponsible and unethical act. Careless destruction of trees and indiscriminate excavations of earth are leading to the permanent cumulative loss of resources for

the future generation in the country. Given this context of Bangladesh, the most basic to all our resource management is the concern for the way we make use of land. Fertile top soil, the life-sustaining layer of the earth, is by far the most valuable and indispensable natural resource. We must seek new levels of awareness and concern for the value of land; make the environmental capability of land a primary determinant of which areas are to be utilized, for what purpose and how. That land is a finite resource is perhaps recognized by even a layman; but the rugged individualism has persistently failed to take note of the long-term implications of land shortage, or the cumulative effect of the individual decisions in terms of the use of land. In his traditional concept of ownership, the landowner used his land anyway he wished. But there is no more room for the free play of individual fantasy or will. Total interest of the community for today and tomorrow must be the overriding consideration now. And there should be no inhibition about the issue of encroachment on individual rights, because even the champions of democracy and individual freedom curtail individual choice for greater collective purpose.

Much of the effort in instituting land use control would entail enactment of new rules and regulations regarding the cultural practices. There are numerous land based natural resources which should be subjected to specific management policies. These include

minerals, water-sheds, vegetation and the soil quality itself. The productive values of land must be preserved. Continued agricultural productivity of any piece of land undoubtedly lies in the proper care of the land itself, not merely care for the production and the profits it may yield. We must recall that biological laws are indeed the foundation of lasting agriculture. Imperative here is a compromise between development needs and environmental hazards. Social and economic demands must therefore be scaled down as much as possible to fit the biological laws governing agriculture. In agricultural practices the man-made system must not be incongruous with the natural system, instead one must reinforce the other. Then and only then land will produce continually in sustained yield, and the nation can be fed and sustained satisfactorily.

Concurrent with land, water is the other component of fundamental concern; and as such both land and water are to be seen inseparable. What could be more crucial than water which conditions the availability of total energy (calorie) and protein requirement of the country. Here the problem ranges from too much water to too little depending on the time of the year and a whole range of extra-territorial factors. It has already been discussed that water management can only be accomplished successfully with the cooperation of the neighbouring countries. Increasing cooperation with the neighbouring countries of India, Nepal and Tibet must be established

for the better management of water and other environmental resources for mutually beneficial ends. So far as the internal management of water is concerned, it must be treated with extreme ecological consideration. We must not forget that aquatic life system is a fragile web. Fish can continue to be renewable resources only through our protecting and improving their habitat. Earlier in the text it has been established that the impact of water pollution could not be more disastrous anywhere else than the densely populated amphibian Bangladesh. Pollution in one spot, and the entire population is exposed to the threat.

Obviously these considerations demand revolutionary expansion in the horizon of conventional planning activities. Conventional development planning would favour those programmes which can show immediate tangible benefit in the light of cost-benefit analysis. This development myopia can no longer be tolerated. Creating the potential for sustained development is more important than development here and now. In the short run, respect for the ecosphere or biosphere may superficially appear to be a trade-off in the rate of 'economic growth' but in the long run 'the turtle wins'. As Professor Mabogunje of the Ibadan University comments:

"Certainly we cannot deny that the creation of a more congenial environment would enable the citizens to function more efficiently and this, after a while, would be reflected in much greater output and development all round."¹⁵

In recapitulation it must be emphasized that the control of land and water use, regulation of potential pollution, prevention of environmental degradation through settlement reorganization and control, are all functions which the various levels of government must take up at the earliest and with due earnestness. Instead of waiting for the disaster to be self-evident, the Government must act now. This involves redefining priorities, describing the methods and techniques and informing all citizens of the urgency of the issue. The additional imperative here is to persuade the citizens to accept an expanded area of social control which demands a changed way of life for the individual as well as the community. The persuasion must be based on creating full awareness and understanding of the symbiotic effects of our actions on the present and future environment - that there are cycles in our actions that turn other cycles, and that the entire eco-system is a part of the total bio-system upon which we ourselves are totally dependent, and further that any wrong-doing to the system would threaten our very existence. Once the new social controls are accepted with good conscience, the benefits would be enormous and obvious to everybody.

III. A SEARCH FOR DETERMINING PRIORITIES

Chapter 11

CURRENT MEANINGS OF DEVELOPMENT

The Origins and Foundation of 'Modelism'

For better or worse, the World Wars brought the people of the world physically closer. Rich nations of the northern hemisphere came to know more and more about the appalling poverty of the inhabitants of the tropical and sub-tropical southern hemisphere. In the years following the Second World War, the international bodies like the UN, WHO, FAO and ILO collected and disseminated facts and figures on world poverty and underdevelopment. The gulf between the rich and the poor countries in their respective standards of living was revealed. The basic want of food, shelter and clothing of the world's poor people were made comprehensible to the rich nations. The poor nations also became aware of their poverty, and the desire for improvement was expressed by their leaders. Also, it became more and more evident that the rising wealth in the rich industrial countries did not cause parallel increases in the poor countries which had been drawn into the web of the world economy. All these inspired a surge of development literature, the pre-dominant issue all too frequently being the development of underdeveloped countries and the developed countries' relations with them. The pre-war term 'backward countries' was replaced by terms like 'underdeveloped country' or 'developing country' in order to euphemise

poverty and also perhaps to hide the guilt of colonialism.

The lead in the tide of development literature was provided primarily by economists and later on reinforced by other social scientists examining the problems of underdevelopment and its cure, development planning in the light of economic and social dynamics. Unfortunately these thinkers and researchers were the products of the rich countries and most of them never had the opportunity to live in the poor countries long enough, nor had they enough down-to-earth information so as to be able to understand the situation fully and realistically. Yet these theorists had the intellectual adventurism to profess that the sequences in the evolution of the now rich countries should serve as the indicator of what the poor countries have to go through, and that the development path of the former should be followed as a model by the latter. Professor Gunnar Myrdal has pointed precisely to this fallacy when he said:

"The theoretical tools that had been forged for the study of the developed countries were used without careful consideration of their adequacy to reality in the underdeveloped countries."¹

This is a manifestation of intellectual over-sight or non-awareness, or is it intellectual self-assertion or egoism in the face of uncertainty.

Another source of fallacy in developmental theorising and model building (and selling) arises from the infringement of political/ideological motivation on

¹ Myrdal, G., *The Challenge of World Poverty*, Penguin Books (Pelican), 1971, p. 26.

the academics of development or underdevelopment.

Professor Myrdal points out that a major source of biases in economic research carried out in the rich countries on the problems of underdeveloped countries arises from the political interests of the former countries in what happens or ought to happen in the latter countries.²

This approach has been labelled by Myrdal as 'opportunistic' and 'diplomatic'. Ironically enough the policy makers and even the intellectuals in the underdeveloped countries are generally inclined to views of this type. It is indeed an undeniable fact that the leaders, both intellectual and political, have been educated by the development literature conceived in the western framework and often at the physical premises of the western universities. But, unfortunately, these scholars and leaders have accepted the text book theories uncritically either in order to gain membership status in the prestigious association of the western thinkers or they were only capable of aping.* In either case the situation is highly lamentable on the part of the underdeveloped countries.

There is one more operative channel through which 'models' find their way and land in foreign soils,

² Ibid., p. 25.

* In the Indian sub-continent, however, there had been an exception in the Gandhian school of thought, later developed into the Sarvodaya Movement led by Acharya Vinoba Bhave and strongly advocated by J.P. Narayan. But this movement has been unable to flower due to the rigid environment petrified by conventional thinking of reactionary nature.

however inappropriate that soil may be. This is through aid, advice and consultancy services offered by the developed countries to the ones underdeveloped. Partly because of their own inherent ideological orientation and partly because of methodological convenience, the development consultants and advisors remain oblivious of the realities of existence of the underdeveloped countries and unhesitatingly assume that the same characteristic relationship between antecedents and consequences of development efforts which worked miracles in their own countries must work elsewhere with equal efficacy. Implicitly they further assume that the parameters in their own countries and those in the underdeveloped countries are the same.

"It is indeed hard for Westerners (comments Guy Hunter) to realize that their ways are not the possible ways for all societies."³

However, in the pretext of short tenure and a set of 'other' (unexplained) reasons, the advisors ignore intensive and extensive study of the local conditions, and invariably dispense the universal prescription which they had carried from home, for an unknown disease. Models are thus transplanted regardless of their applicability or appropriateness to the recipient situation. They go unchallenged because of the reasons mentioned in the preceding paragraph. Thus one technical and economic pattern has come to dominate all societies in the so-called free world. The prolific literature on

the problems and prospects of development in the under-developed so long has had one message in common that industrialization through aid and borrowing from the richer nations is the only way out.

After about two decades of aid operation and 'development planning', inadequacies of the otherwise shapely and elegant models have now been exposed by a number of radical thinkers and researchers among whom Gunnar Myrdal, Rene Dumont, Paul Streeten, Andre Gundar Frank, Dudley Seers stand out prominently. The radical thinkers have tended to show explicitly or implicitly that the popular cliches like 'the vicious circle of poverty' (Nurkse), 'low level equilibrium trap' (Nelson and Liebenstein), 'low rate of savings' (Lewis), 'subsistence level of income' (Jorgenson) and 'stagnant traditional sector' (Rostow) are mostly based on either mistaken views of history or society, or on inappropriate analytical tools.

The fallacies which have been labelled by Myrdal as 'systematic biases' have been made much more explicit by Streeten and condemned on a number of counts.⁴ For reasons mentioned earlier the modelists conceived development as purely and singularly an economic phenomenon, and hence they examined the problems of under-developed countries in terms of their own narrow experience of economic facts and relationships. Here

⁴ For details see Streeten, P., *The Frontiers of Development Studies*, The Macmillan Press, London, 1972, ch. 5.

the towering objective was economic growth measured in GNP which meant explicit assumptions that a larger cake could be more comfortably distributed than a small one, and that present inequalities will eventually be smoothed out during economic growth. Such an approach and such assumptions are grossly inappropriate in the context of the underdeveloped countries for the conditions which characterized the developed countries in their period of development are simply non-existent in the developing countries today. Obviously, the implicitly assumed presence of a rational social framework, efficient and dedicated civil service, skilled, honest and disciplined labour force, achievement motivation, thrift and prudence are not there. Even the tools of analysis are inappropriate as Streeten points out:

"Capital, income, employment, price level, savings, investment, presuppose conditions which are absent in many underdeveloped countries."⁵

Guy Hunter joins Paul Streeten in acknowledging that life is lived at this level (meaning underdeveloped countries) through a host of petty activities escaping our tool of measurement.⁶

However, after years of trials it has now been clearly shown that creation of those presupposed conditions are the primary needs of the undeveloped countries. The truth is that the intricacy of the linkage of development processes operative in the underdeveloped countries

⁵ Streeten, P., op. cit., p. 55.

⁶ Hunter, G., op. cit., p. 51.

remained outwith the area covered by the models. The fact that the vicious circle of poverty is triggered off by the initial state of malnutrition which has serious productivity consequences and which in itself is caused by depleted soil, and that archaic social structures determine an inequality of distribution lay beyond the consideration of the model builders. It has now been realized that the so-called non-economic factors which were left outside the jurisdiction of planning are fundamentally instrumental in creating conditions where economic development per se can flourish. Moreover, the promise of redistribution of the cake has most flagrantly been nullified during the past decade of development experience. It may be counter-argued that the processes by which social injustice becomes institutionalized and perpetuated should be seen as a monstrous effect of a certain growth process and not of growth itself. This is all the more reason why the linkage system operative behind the growth process needs to be emphasized. In response to UN enthusiasm (Decade of Development), growth in several countries has been astonishing but they have grown in some emasculated sense and not really developed. As a matter of fact the questions of distribution and the non-quantifiable aspects of social change are so predominant that economic growth per se is losing ground in discussion.

The irrelevance of the sociological theories of development again constructed in the western civilization

could not be more explicitly shown than the exhaustive criticism by Andre Gundar Frank.⁷ In these theories also the general features of the developed economy are abstracted, regardless of the unique situation under which such economy developed, and are construed as an ideal type intended to be exported to the underdeveloped countries with the further assumption that development is a process of transformation of one type into another. The same body of wisdom, the 'ideal typical index approach' as labelled by Frank, also envisages that under development is an original state characterized by indices of traditionality, and that development consists of removing those characteristic conditions and adopting those of the developed countries.

Frank's treatise has very clearly uncovered the analytical inadequacies and empirical invalidity of the theories of Parsons, Hoselitz, Levy, McClelland and Rostow not only in the framework of underdeveloped countries but also in relation to those developed conditions where they were formulated. For example, Hoselitz and Parsons had argued that to eliminate underdevelopment ^{and to} generate development it is necessary only to change particular variables, roles or parts of the social system, and that it was not necessary to change the structure of the system itself. Frank very rightly points out that such an approach is basically erroneous on being partial and

⁷ Frank, A.G., *Sociology of Development and the Underdevelopment of Sociology*, Pluto Press, London, 1971.

as such is liable to fail the test of realities of Third World countries where in general the whole system is anti-developmental. As a matter of fact the dogma implicit in the conventional theories may be interpreted as a refusal to accept any move towards major and radical changes that are necessary for mass development. The theories are conceived within existing political, social and economic status quo and tend to maintain it, as Frank puts it:

"The roles (the roles and components of social system isolated and targeted for change) and their incumbents are extensions of a world embracing system of development and under-development wherein the incumbents are agents to serve and maintain the system and under-development in particular."⁸

Moreover, such theories are apparently inadequate in that they suffer from the handicap of 'one-factor analysis' and 'illegitimate isolation' as pointed out by Paul Streeten.⁹

Other conventional theories tend to accept historical experience of the developed countries as an ideal and seek to explain developmental processes within the framework of not only their history but also of their contemporary relationships. In this group W.W. Rostow's 'stages of economic growth' stand out, more than others, as a target of severe criticism. Rostow has postulated development as a continuous march from traditionalism to economic maturity and saturation through a definite path of

⁸ Frank, A.G., op. cit., p. 17 (parenthesis is my own).

⁹ Streeten, P., op. cit., pp. 54-57.

intermediate stages. Rostow has taken note of the overt manifestations, i.e. the profile of development without recognizing the undercurrent of historical and political circumstances which led to the stage developments in his sample study. The countries now underdeveloped were caught in the labyrinth of economic and political expansion of Europe in the 15th and 16th centuries; and since then development of some countries has, no doubt, taken place causing simultaneous underdevelopment in others.*

Historically development and underdevelopment has been caused by the positive and negative forces respectively of the same stream. It has hardly been debatable that "the plunder of Bengal helped the industrial revolution in England".¹⁰ Is it now conceivable that a similar sequence of events could be repeated in favour of the underdeveloped countries? If not, then those stages are entirely irrelevant in the context of development processes in the Third World countries.

Parallel to the 'ideal index approach' there has been another branch of development prophecy with indomitable faith in the 'spread effect'. Here it was taken for granted that development takes place through the diffusion

* The process of underdevelopment and concomitant development has been borne out in many works on modern history and international relations. For detailed analysis see for example (i) Thompson, E. and Garret, G.T., *Rise and Fulfilment of British Rule in India*, London, 1935; and (ii) Rodney, Walter, *How Europe Underdeveloped Africa*, Boglel'Ouverture Publications, London, 1972.

¹⁰ Nehru, J., *The Discovery of India*, Asia Publishing House, Bombay, 1961, pp. 295-307.

of cultural elements from developed to the underdeveloped countries in a sequence of centre to centre and then to the periphery. This 'diffusionist approach', as Frank describes it, further envisages that if there is any obstacle or barrier in the process of diffusion, development is obstructed and underdevelopment prolonged. In fact the diffusionist pundits, instead of looking into the deep-rooted causes and mechanisms of underdevelopment, suggest that the underdeveloped countries should invite and welcome diffusion in the form of aid, both financial and technological. In reality this is, inescapably, a process of techno-cultural and pecuniary enslavement of the poor countries by the rich.¹¹ The end result of flow of aid from the developed to the underdeveloped countries during the last two decades bears testimony to the truth. During the last two decades there has been more capital inflow to rich countries than the outflow as aid.* By now it is sufficiently documented in the

¹¹ For an elaborate discussion on the consequences of aid see Griffin, K.B. and Enos, J.L., Foreign Assistance: Objectives and Consequences, Economic Development and Cultural Change, Vol. 18, No. 3, April 1970, pp. 313-327. In refuting Griffin and Enos, Simon Rottenberg draws analogy from the principles of banking, and thus proves (perhaps inadvertently) that aid-giving is pure business, nothing more, nothing less. - See Rottenberg, S., Foreign Assistance: Objectives and Consequences: Comments, Economic Development and Cultural Change, Vol. 20, No. 1, Oct. 1971, pp. 142-154. See also Griffin and Enos's reply to Rottenberg in the same issue of the journal referred to above, pp. 155-158.

* For example, between 1950 and 1965 there was a net inflow of \$16.6 billion to U.S. from the poor countries. Between 1961 and 1971 per capita aid received by developing countries from the DAC (16 of OECD's 23 countries) increased from US \$3.65 to US \$4.00 but the real /

reviews of international development to make obvious what aid and investment capital from the developed countries has done to the developing countries. Foreign aid and investment add only to the supply of physical capital or goods into the markets of the recipient countries. Conversely, the flow of profits from foreign owned investments as well as the debt, serviced by an unprotected currency represent an ever expanding drain on the balance of payments in poor countries.

In the field of technological diffusion the same monopolistic structure of the industrial economic system prevails. Far from diffusing more and more technologies appropriate to the needs of poor countries, the trend is of increasing degree of control by the industrial capitalists system. The 'push-sale' of sophisticated technology to the poor countries by the rich perpetuates dependence of the former on the latter. This is supplemented by a similar set of arrangements in economic organization. It is no accident that the top roles in economic organization in the undeveloped countries have their umbilical cord tied to the big cities of the rich industrial countries.

(Footnote contd. from p. 286)

real value declined from US \$3.65 to US \$ 3.10 in the same period. For detailed information see (i) Magdoff, H., *The Age of Imperialism: the Economics of US Foreign Policy*, Monthly Review Press, 1969, Ch. 4; (ii) Hayter, T., *Aid as Imperialism*, Pelican Original (Penguin Books) 1971; (iii) Shonfield, A., *Attack on World Poverty*, Chatto and Windus, London, 1961; (iv) CERES (FAO Review), *World Report*, Vol. 5, No. 6, Nov. - Dec. 1972, p. 9.

The fact of the diffusion of institutions and values from the rich to the poor countries is beyond any doubt. Critical investigation by A.G. Frank has again revealed that the diffusion to the undeveloped countries of values and institutions have been very selective at both the diffusing and assimilative ends. The selective diffusion of the so-called liberalism has been motivated for the protection of the dominating system, political, economic and social. The purpose of diffusion is overtly reactionary - diffusion in order to maintain the status quo and thereby serve the interests of the 'vested interest group'. The process is subtle, nevertheless it cannot escape the notice of a critical observer. The diplomatic officials, the technicians of aid programmes, the representatives of business concerns, the military advisers and a host of others, though they never bear the seal of 'change agent', yet their major latent responsibility is to secure some type of change. The same objective is achieved by another measure - by inviting the technicians, teachers, professionals and administrators to be 'educated' in the developed countries not according to their 'felt' needs but according to the 'taught' values. What has been diffused unplanned or un-motivated, has done irreparable damage - in particular the creation of aggressive and materialistic individualism and ever rising level of 'wants' (consumerism) which has ruptured the moral fabric of the society in the poor countries.

Ideally the 'spread effect' should be a function of improving levels of living for the mass population, particularly in the availability of adequate nourishment for the body and the mind (cultural aspect). So long as this is not allowed by the mechanism of selective diffusion and so long as diffusion is geared to maintain the status quo, diffusionists have little to offer for the future of the undeveloped countries. Diffusion, the way it is now being activated by the developed countries is proving to be a positive obstruction to progress. For instance, unemployment in the Third World at the present scale has been precipitated by the concept of progress as defined by conventional wisdom. The advancement of the rich countries has paralleled the progress of modern science and technology. It was therefore assumed that the same technology will act as a force to develop the 'Third World'. But clearly the requirements of the rich countries are completely different from the needs of the poor countries. Where unskilled labour is abundant and capital scarce, importation of capital-intensive labour-saving technology has led to greatly increased level of unemployment. The anti-employment syndrome is often furthered by the tying of aids. Most aid, whether governmental or private, is tied; it is provided on condition (explicit or implicit) that the aid will be used to buy goods and equipment from the donor countries - where goods and equipment happen to be capital intensive. Thus more and more 'tied aids' mean fewer

and fewer jobs and more and more technical dependence.

"Development through economic dependency (observes John Goering) leads to perpetual instability and the increasing contradictions associated with an economy without the integrity and autonomy needed to realize the choices and designs of either the masses or their leaders."¹²

Finally, 'Modelists' and 'Developmentalists' have demonstrated their conceptual inadequacy (recognised or not) in one fundamental area. They have persistently avoided the issue of trans-national mechanism of development. Every day the governments of the richer countries make decisions which affect the poorer ones. Decisions on trade agreements, tariffs, currency valuation, defence, aid and many other policies affect, frequently, adversely, one or the other of the less developed countries. A change in buying, manufacturing or marketing policy in a rich country can significantly alter the economic prospects in the poor countries. Together these constitute a system which, as it is controlled by the rich, offers little chance to the poor countries to develop.

Because of the superiority of big and mature international industries, no relatively underdeveloped country is likely to succeed in industrializing under competition with the world market. Cane sugar has to compete with often subsidized and protected beet sugar; cotton and jute products have to make their way against synthetics. Quotas and tariffs also impede the growth of manufactured

¹² Goering, John M., Social Effects and Limitations of Development Planning, Human Organization, Vol. 31, No. 4, Winter 1972, p. 392.

and processed exports from the low income countries. In spite of the low production costs, the poor countries have been unable to increase their total export earning. Under such conditions the prospect of diversification is also discouraging. New products are dependent on the taste and willingness of the industrialized countries to buy them at a remunerative price and this tends to discourage the diversification of existing single product economies.

On top of everything else, many poor countries are suffering from the falling value of their export commodities - they have to sell more in order to buy the same quantity of goods from the developed countries.* These adverse relationships, vitally significant as they are, have been properly emphasized only recently.** Clearly development prospects must be evaluated in the framework of a 'divided world' for this is an undeniable reality so far as the exogenous forces of development are concerned.

From the foregoing discussions it should be clear that in reality the problems of development are not economic or social or political per se - they are problems

* Since the oil crisis, some signs of change have appeared in favour of some countries but the less fortunate ones (non-oil producing) are going to be hit perhaps more severely than before.

** For detailed analysis see (i) Seers, Dudley and Joy, Leonard (eds.), *Development in a Divided World*, Penguin Books 1971; and (ii) Dumont, R. and Rosier, B., *The Hungry Future*, University Paperbacks, Methuen and Co. Ltd., 1969.

that are inextricably complex with many points of mutual interaction. Economic growth determinism, endemic in the western social thinking, has ended inevitably in the dominance of the industrial city, the machine, the free market and all the paraphernalia of the existing industrial societies. After decades or perhaps centuries, injurious industrial processes and the injudicious use of some agricultural chemicals, have started causing apparently unmanageable problems. The purpose of the western mode of development is now being reassessed. Unregulated competition is shown to be leading towards a dead world. The west has perhaps started writing a revised agenda for survival, (e.g. Limits to Growth, Only One Earth, Stockholm Conference, etc.). How long will it take for the Third World to start thinking of revised meaning and purpose of development from their own experience and follow a path appropriate to their own reality?

A Revised Definition of Development

During the last two decades the world has realised that material progress alone cannot guarantee sustained higher standard of living for all. Concurrent with material progress, other changes including changes in the moral and spiritual values are also necessary. In some situations, the latter dimension of change is a necessary pre-requisite for the former. Hence the United Nations Research Institute for Social Development

(UNRISD) defined development as

"a process of qualitative change and quantitative growth of the social and economic reality which we can call either society or economy."¹³

Qualitative change and quantitative growth can be assessed as a consequence of development in social or economic terms, but as a process, social and economic development are inseparable and mutually causative, and as such no purely social or purely economic development is possible.

Nevertheless, the UNRISD approach has one drawback in the sense that an economy may be growing rapidly and the social indicators may be advancing satisfactorily, but if the bulk of the population is excluded in the matter of priority fixation then both the style and the content of development are likely to be very imperfect. The society at large must be enabled to express for itself its own desired priorities and aspirations in terms of social and economic indicators, otherwise those indicators, even when they are advancing, might represent development

¹³ Drenowski, J., Social and Economic Factors in Development (Introductory Considerations on their meaning, measurement and interdependence), UNRISD, Report No. 3, Geneva, 1966. The UNRISD isolated about a dozen social and economic variables as indicators of development which suggest strongly that there is not a 'general economic' sector and a separate subsidiary 'general social' sector. The indicators represent a wide range of developmental and structural aspects all of which tend to change together as a society develops.

Another UNRISD research consultant (Project Global - 2) holds that people in the underdeveloped countries should realize that development is not necessarily 'modernization' or 'westernization' but a process that can be generated from within their own socio-historic context. - See Prescod, C.W., A Means or an End, CERES (FAO Review), Vol. 5, No. 3, May-June 1972, p. 37.

only in a cross-national statistical sense. Obviously, therefore, development must mean change and advancement in a socially desired direction. Here again arises another debate over the notion of 'desirable direction' for what is desirable under one given set of circumstances may not be desirable in another. A truly desirable direction, therefore, must originate from the ground up. This point needs further elaboration.

Earlier mention has been made to the way in which conventional wisdom had the poor countries believing that they would develop most rapidly if they adopted the path which was followed to secure growth in the countries that are now rich. Subsequently in the poor countries there arose a tendency amongst the economists and other groups of planners to argue in terms of cliches from the past of industrially developed countries rather than in terms of the realities of the existing situation. After decades, the need for clear rethinking has been recognised as imperative, but the problem is where to begin. The first step obviously is to discard ideological preconception and intellectual snobbery.

"We will have to do away with much of what among economists are often mis-called sophisticated methods and much rigorous unwanted precision."¹⁴

Having freed ourselves from the biases of 'modelism' and 'developmentism' we must start looking at problems as problems as such - not economic, social, political or physical; because if we so classify them, the previous

¹⁴ Myrdal, G., op. cit., p. 36.

biases would reappear. Notwithstanding any value premises, the problems would then need to be priority-rated - starting from the most pressing to the least. The over-riding concern* here must be the mass of the people. This mass concern in itself will bring about the most commonly desired priority which will in fact be dictated by their most pressing problems.

The next requirement is a clear down-to-earth understanding of the problem in the most comprehensive manner. It is a much more strenuous and demanding job than is usually considered. It is here in the identification of causes that 'modelism' and 'developmentism' most inappropriately intervenes and consequently research and investigation remain shallow or even misleading. It can never be over-emphasized that no mistake is permissible in understanding the causes of the problems. In an operational sense development is the process of removal of those conditions which are identifiable as symptoms, causes or consequences of underdevelopment. Therefore, if we commit a mistake in recognizing those conditions, the whole process is liable to be mis-channelled. Further it must be warned again that

"the distinction between parameters and variables

* It will be unfair to say that economists and planners do not express such concern; as Gunnar Myrdal points out - most frequently planners and plans start with most generous reservations emphasizing that 'planning is for people' and that 'development is a human problem' but at the end of the day their proposals finish in such a way as if those human considerations never existed. Many National Plans bear testimony to this fact.

should not run along the line drawn between economic and non-economic factors,"¹⁵

and that the process of classification of parameters and variables must not be allowed to be influenced by ideology, vested interest or convenience of analysis. Otherwise, the whole purpose of objective analysis would be vitiated and subsequently the process of development misdirected.

Finally, development must mean creating the potentials of sustained development - not just here and now but in the future as well. This issue has never received the proper attention it deserves. Generally, human perspective is myopic. The space and time horizon¹⁶ of the majority of the world's people are indeed short - the 'neighbourhood' and the 'next few years'. People cannot be blamed much for their shortsightedness. They are conditioned by their culture, their experiences and emotions and above all by the urgency of the immediate problems that surround them. But, ironically, the planning prophets are not immune from the same sort of myopia. And the 'usually short-lived' politicians have to act for the present and opt for the most magnificent short-run achievement. Thus the world became fettered with the obsession of living for the present. The 'rat race' started - the spirit of conservation and 'level of content' was sacrificed at the altar of consumerism. Eventually, the process is losing inertia and perhaps

¹⁵ Streeten, op. cit., p. 54.

¹⁶ Meadows, D.H. et al., The Limits to Growth, Earth Island Ltd., London, 1972, p. 19.

moving towards a feared halt - symptoms are appearing (energy crisis, material crisis) and the pinch is being felt (bio-spheric pollution). The lesson is too obvious and self-explanatory. In our rethinking, therefore, we must accept that creating the potentials of sustained development is more crucial than achieving a development target set here and now.* The demand is for a self-correcting system which will guarantee internal coherence timelessly in all its dimensions.

In summary, development means creation of conditions whereby people are led individually and collectively to analyse and then meet their own needs and aspirations without destroying the moral fibres of society. Development must not be confused with economic growth or expansion. So far as the development process is concerned, it should imply the enabling of people to use minimum resources to satisfy their expanding essential needs through a congruous set of relations between people and their social and physical environment. It is therefore implied that economic elements, social elements and ecologic elements should be considered as inseparable in the process of development. It is further implied that the development of human potentialities towards the achievement of that congruous relationship between man and his environment in the material progress without a corresponding progress

* About two and a half millennia ago Kuan Tsu, the Chinese philosopher taught us, "if you give a man a fish, he will eat it at once; if you teach him how to fish, he will eat the rest of his life" - Have we learnt anything?

in the man-environment relationship would be inevitably ill-founded, temporary and unsustainable.

The Case of Bangladesh

The situation that now obtains in Bangladesh can most appropriately be described as that of entrenched poverty - poverty in its widest possible connotation. Usually poverty is conceptualised as an economic phenomenon signifying low scores on certain indicators of standard of living, absence of wealth and absence of the economic pre-requisites to growth. But certainly poverty is a much more complex notion. It needs to be understood historically (how people and nations came to be poor) and in the light of social stratification (how poverty of one social group is perpetuated). Recently scholars in the biological sciences in their studies of poverty, have taken more cognisance of the role of physical privations in human conduct (why the poor behave the way they behave - Oscar Lewis: Culture of Poverty). Obviously, therefore, an understanding of poverty in any society requires the use of contributions from social sciences as well as biological sciences. To what extent poverty is the symptom, cause or consequence of under/un-development, will then be revealed almost automatically.

Poverty in Bangladesh is characterised most commonly by the insufficiency of basic needs - basic needs in absolute terms of the primary and minimum elements of

subsistence nutrition.* There should be no disagreement whatsoever that people who are so deprived of their subsistence needs that their survival is threatened, are poor (Chapter 8). This poverty of nutritional needs (hunger) is so intense and widespread that possibilities of human life have been reduced to a minimum of mere survival. Prolonged hunger and malnourishment have blunted enthusiasm and a desert of despair and lethargy has settled on the minds of millions - much that is human is lost to them. The WHO and FAO** publications have made it sufficiently clear that the state of satisfaction of physiological needs forms the mainsprings of human motivation and social behaviour. Hungry people and feeble brain, this is where poverty starts, and descends spirally from one generation to the next.

* A balance between calorie requirement and calorie intake is the first pre-requisite for satisfactory working efficiency...Protein, which is one of the main components of the body structure, must be supplied by the diet in quantities sufficient to build up and maintain muscular tissues...the supply of sufficient amounts of vitamins and minerals is another condition for general health and for a full working capacity. If general health is weak or the muscles poorly developed, the worker will be unable to do heavy work requiring high calorie expenditure. Therefore, the food intake must be sufficient to ensure the maintenance of health and muscular status. - Freedom from Hunger Campaign, Basic Study No. 5, Nutrition and Working Efficiency, UN/FAO, Rome, 1966, p. 11.

** The most obvious mental changes in cases of starvation are the emotional depression, apathy and lassitude. The depression is coupled with a general lack of drive and initiative. The intellectual powers are not applied. As initiative and ambitions are subdued, interests are narrower and it is found impossible to concentrate for long on any task. The general picture is often that of plain stupidity - UN/FAO: FFHC Basic Study No. 5, op. cit., p. 20.

It is generally observable that where food is plentiful man's hopes and aspirations for a better life are a motivating factor for restricting population growth. Malthus's observations, if not his conclusions, were correct: the ignorant miserable people of little hope and no prospect for economic security except his own children has no intention of limiting his family, particularly when there is the likelihood of losing children through infant death, he is not interested in any family planning. Thus he goes on bringing in more mouths to share his miseries. In this respect the poorly fed peasants of Bangladesh are no different than the miserable labouring class of 18th century England. Hunger, as a matter of fact, forms part of the conditions where improvident births take place - and the vicious circle is set into motion. Bangladesh has been no exception.

Like many other poor countries, the vicious circle of poverty in Bangladesh has been reinforced by a number of endogenous and exogenous forces. Of the endogenous forces the initial one is that of scarce resources* - both

* Although natural resource endowment is not decisive but certainly it is permissive. Perhaps the most important factors are human ones - their numbers, their enterprise and initiative, their inventiveness, their level of technical knowledge and above all their desire for betterment and their willingness to make necessary sacrifices to attain it. When these human factors are themselves conditioned by natural resource then evidently a decisive role is played by natural resource endowment. This last part of the argument is not well realized by Alan B. Mountjoy who seems to undermine the importance of resource endowment. - See Mountjoy, A.B., *Industrialization and Under-developed Countries*, Hutchinson University Library, London, 1971, Ch. 1.

physical and fiscal. Geologically being recent in origin, the possibilities of mineral deposit in Bangladesh are extremely limited. Land and water are the two most fundamental resources for the supply of basic cereals and proteins, cash crops and industrial raw materials. A predominantly agrarian economy and society has utilized land extensively though not quite intensively and there is now close-to-zero scope of geographical expansion of agriculture. On the other hand, productivity of food and cash crop is remarkably low and static - one-third of Egypt and one-fifth of Japan. A vicious circle is operative in the field of productivity as well. Weak and unhealthy work animals are poor yielders. Marginal productivity of human labour tends to be zero because of the cultural practices (archaic knowledge and techniques of production) and limited aspirations - an increase in the labour force does not mean additional labour input. Soils are liable to be poor in plant nutrients,* and unable to respond more to the traditional method of production. Under the circumstances population explosion is not the worst part of the story - the concurrent worsening of man-land ratio and more precisely the man-land-productivity ratio is more

* It must not be inferred from the luxurious growth of tropical jungle vegetation that the soil in those parts of the world are generally rich. On the contrary, tropical soils are usually very poor in soluble elements because of the copious warm rain leads to a rapid and deep leeching of the soluble elements. The warmer the water, the greater is its acidity. Soils in rainy tropics are thus generally poor in mineral matters such as lime, magnesia, potash, phosphate and nitrates.

crucial. Population density in Bangladesh is one of the highest in the world and the critical population density (CPD)* has perhaps been crossed long ago and now inevitably the process is of worsening levels of living. Depleted soil, meagre crops, hungry people and feeble mind - this is how the descending spiral of poverty is working. As a matter of fact hunger, misery, withdrawal and the population explosion are one problem and a problem to be solved first by production of adequate food. By feeding the soil we can feed the people and by feeding the people we can break the vicious circle. It can never be over-emphasized that before anything else people must eat first in order to be able to contribute effectively to the nation building activity. No nation can go far with any other development programme until it feeds its people adequately with assured regularity.

In the preceding discussion it has been suggested that the 'poor are poor because they are poor'. But simultaneously there is another force working; the poor have become poor because the rich have become rich at the cost of the poor, and that the poor stay poor because the

*
$$CPD = \frac{100 \times Ca \times L}{CP \times WC}$$
 where Ca is area necessary to support one person for a year;
 CP is the percentage of the whole territory which can be cultivated at all;
 L refers to number of plots necessary to allow a proper ratio of rest and use;
 WC refers to working capacity.

See Weiner, J.S., Tropical Ecology and Population Structure in The Structure of Human Population, Harrison, G.A. and Boyce, A.J. (eds.), Clarendon Press, Oxford, 1972.

the rich remain rich. Thus the inequality issue seen as a causative factor of relative poverty turns our attention to the prevailing social system. Society in Bangladesh is still wedded to the concept of social hierarchy. The exorbitant advantages given to the elite and the upper class have belittled and undermined all other social groups and have thus blocked their advancement. The elite has a vested interest in maintaining the status quo and the well-to-do land holders are instrumental in shaping the land reform to their advantage. The vast majority of the poor are politically powerless and impotent. This is the process of power distribution and its exercise which acts to keep the poor class in their disadvantaged position in perpetuity. Thus inequality in the social structure is causing relative deprivation and maldistribution of resources in favour of few at the expense of many. In this sense poverty is caused and perpetuated by inequality in the social structure itself. As long as these inegalitarian relationships continue, grass-root development and/or mass development and, of course, political participation are rendered totally impossible. Distributive justice is possible when individuals and groups are freed from their marginality. Freedom in the social sense should mean emancipation from the bondage of marginality both at individual level and group level. It brings dignity and identity which again are pre-requisites for permanent development.

Development therefore should mean removal of this

relative poverty and correction of the unhealthy distribution of opportunity. Development must mean breaking the stagnation of poverty. Towards this end, development demands a revolution in attitudes and institutions. Private individuals and political leaders, business magnates and financial tycoons - all must realise the interdependence of human affairs. Regard to individual decision as implied by free-market protagonists is absurd. Thus political choices become inevitable so long as development is essentially a matter of changing the structure of the economy and society. What must be aimed at is the creation of personal relationship based on humanism. The society should be one in which no one will be belittled by the bigness of others, where relationship would be harmonized and rivalries minimized, where people will be brought in cooperation and communion with one another.

Mention must be made of some other endogenous forces which left the issue of basic poverty unsolved. First of these is 'status symbolism' which the previous rulers of Bangladesh so ardently adhered to. The Pakistani regime unfailingly hankered for the most spectacular, as all newly independent countries do - building huge steel mills, wide boulevards, gigantic airports and stadia, fabulous hotels and luxurious offices. Automation and other aspects of western technology were introduced to enhance national prestige. In order to demonstrate their achievements, and thus justify their existence, the

politicians and administrators chose urban development as the most visible target. Consequently the problems of food received only lip-service. And the much crucial issue of reform of institutions and human attitude was manipulated in such a way (creation of 'Basic Democracy', chapter 1) that entrenched interests were not disturbed, rather were they to be augmented.

The reactionary forces in society found nourishment in the archaic system and content of education. The irrelevance of much of colonial education was not recognized. Elitist education has not prepared the graduates for any kind of manual work nor for agricultural profession, rather has turned them away from it. Certificate and job oriented education has not imparted knowledge relevant to the country's basic problem nor did it orient the students towards the problem. A young man completing his education, be it in engineering, agriculture, social work or community development, is not expected to work in the villages nor soil his hand. Elitist motivation of education undermined the importance of agricultural education. Such motivation found its support in the Government's Service Policy where the civil servants in agriculture were subordinated to revenue civil servants or other administrative echelons. Civil service conditions failed to attract promising boys into agriculture. Thus the fate of agriculture and food production remained at a subsidiary level of national concern. Unless the agricultural profession is ennobled, unless agricultural

civil service is made more dignified and honorable, unless agricultural education is made the focal point of all education, the basic poverty of hunger and malnutrition will continue to be with us.

The planning practitioners in Bangladesh did not behave any more pragmatically towards the problem of basic poverty than the politicians. Ideological pre-conception and academic orientation turned them away from the reality of the country. Oblivious of the country's resources, the 'planners' formulated strategies on the basis of western examples and advice. Monetary investment for industrial development and rapid industrialization petrified the minds of planners and economists. Such biases resulted in injudicious appraisal of local resources, and over emphasis on money and foreign aid. Borrowed conceptions of development ended in wrong priority fixation and wrong resource allocation (Chapter 9). The results are obvious - an ever expanding food gap and a worsening balance of payment situation.

On top of everything else there were the evils of corruption, nepotism and selective soft-statism, a common social malady which Professor Myrdal has so succinctly analysed in the context of the Indian sub-continent.* Huge amounts of money allocated for works programmes and water resource development have been misappropriated.

* Myrdal, G., Asian Drama: an inquiry into the poverty of nations (abridged) - Vintage Books, Random House, New York, 1972, Ch. 14.

This is such an open secret in Bangladesh that it hardly needs any factual or statistical evidence. Civil servants in all fields, instead of rendering service to the community, virtually lord over it. In the absence of any social control, such anti-social forces go unchecked and unpunished.

In the context of exogenous forces of poverty in Bangladesh it is perhaps more relevant to discuss the recent colonialism of the Pakistan Government. The impact of the remote British colonialism is so obvious that it is not worth discussing any more. The same rural sector which yielded considerable wealth for industrialization of England was

"subjected (once more) to a high rate of primitive capital accumulation which was transferred to finance the growth of West Pakistani capitalism and industrialization."¹⁷

In order to promote growth, income was redistributed in favour of the industrialists and traders. The policy of preferential effective protection¹⁸ resulted in distorted pricing that affected the rural sector adversely. The industrialists and traders obtained a large measure of control over the resources; the problem of basic poverty remained unsolved. In population control, the conventional approach to family planning of distributing technology without creating receptivity failed to achieve

¹⁷ Khan, A.R., *The Economy of Bangladesh*, Macmillan, St. Martin's Press, London, 1972, p. 29.

¹⁸ Griffin, K. and Khan, A.R. (eds.), *Growth and Inequality in Pakistan*, Macmillan, 1972.

the targeted demographic transition. Consequently per capita GDP, per capita consumption of major goods, social scarcity indices all worsened meaning a lowering of level of living standards for the vast majority of the poor. At the same time the poor producers of Bangladesh remained vulnerable to world market forces. Jute, the only cash crop of the poor peasants and the major export crop of the country, remained subjected to the vagaries of the world market and international politics. There is no doubt that during the last decade jute price has risen very slowly, if at all, in relation to the prices Bangladesh has to pay for her imports. The country can do nothing about it except perhaps sell more, if she can, to buy the same amount or less of industrial goods.

The lessons are clear: (i) Transfer of money and transfer of techniques of production does not transfer wealth nor does it lead to development - it only transfers indebtedness. A country cannot be economically (and politically) independent when the vast section of its inputs for development is supplied from foreign sources. Bangladesh will be wise to plan her future in the light of the indigenous resources she has, the technology she can improvise/adapt and the ideas and institutions she can freely choose. (ii) Vital for sustained development well founded on the soil is the emancipation from any kind of subservience whatsoever. Bangladesh must strive to be sovereign, economically and culturally. Strategic isolation from the existing aggressively greedy and

hypocritical western market is necessary except perhaps when trade by favourable terms is imperative. The reason we eagerly want to establish trade relations with the advanced countries is that we have an unnecessary obsession for best products; and in order to buy these 'best products' we have to sell our defenceless agricultural products and 'sub-standard' industrial goods at a sacrificial price to the same rich countries. Instead, if we could satisfy ourselves with the 'second best' or even the 'third best' we could have profitable terms of trade between the poor countries exchanging our sub-standard products. We must find our strength in regional alliances with our equals and neighbours. Instead of trying to join the rich man's club, we should form a 'poor man's union' and help each other out.*

The moral here is that of self-reliance and independence. Economic and political independence and self-reliance has a growth based rationale - without internal

* Paul Streeten reminds us that in the world economy there are strong forces at work causing a very uneven distribution of the gains from trade and economic progress generally, so that the lion's share goes to the lions, while the poor lambs are themselves swallowed up in the process. He further points out that there are vast untapped sources of bargaining power in the developing countries providing they are willing to unite. See Streeten, P., Terms of Trade are not made on paper, CERES (FAO Review), Vol. 5, No. 2, March-April 1972, pp. 34-38. See also Bairoch, Paul, Free Trade: Myths and Realities, CERES, Vol. 5, No. 2, March-April 1972, pp. 17-19; and Chocano, Guillermo Molina, Interdependence or Dependence, CERES, Vol. 5, No. 2, March-April 1972, pp. 49-52.

self-sufficiency and growth, economic and political independence is unlikely to come by. But the term 'growth' here is used in a very non-conventional perspective, growth towards self-sufficiency and primarily self-sufficiency in food. This point ties well with our first objective: elimination of basic poverty of hunger and nutritional needs. Self-sufficiency in food, therefore, must be the over-riding and immediate objective. And this must be achieved by non-conventional means. When money is scarce, export earnings uncertain, aid self-defeating and non-self-respecting and when there is hardly any scope for increasing monetary resource by taxation, mobilization of people towards that simple end is the only imperative. Mobilization of people is necessary for two purposes: (i) to substitute capital requirement by pooling people's labour and (ii) to change people's moral and social values, to inculcate the spirit of level of content, to infuse the value of cooperation and sharing and above all to arouse their dynamism. People's labour can be and ought to be turned into capital in the form of public works Programmes, irrigation schemes, composting projects, pond revitalization schemes and the widespread development of small rural industries which would bolster food production and facilitate further development. This is much easier said than done. It is much easier to build a steel mill, even with borrowed money and hired foreign contractor, than to convince one hundred people to work on a compost pit. A firm and

dedicated leadership coupled with the qualities of a great teacher and a persuader is the pre-requisite. A new creed is needed to impart a concept of development which will give the people a sense of equality, common dignity and a level of contentment. This will demand a great deal of sacrifice and magnanimity from the upper and middle classes, the most reactionary forces in the society.

The economy must pass through a sufficient expansion of the agricultural sector before entering into the progress of industry. When population is increasing fast, priority in industry would mean that a stagnant agriculture will have to support increasing number of mouths. The present trade gap will widen disastrously if food gap is to be covered by increasing costly imports. Only an accelerated programme of agricultural development will provide a stable basis for industrialization which in turn would absorb the high turnover of the surplus population from the rural sector. In the matter of industrialization, it must be warned here that technologies will have to be selected on the basis of their appropriateness to social reality and the desired end. Where poverty is so widespread and the labour force so vast, it will be simply impossible to mop up enough internal savings to absorb the incremental labour force within the framework of western technology, e.g. agricultural mechanization. Hence the issue of improvisation in the traditional technology must not be by-passed.

In the meantime, the demographic reality in Bangladesh

and its potential effect on the future prospects of the country must keep our attention on population control. Any economic system is bound to have its threshold limitation because the ecosystem itself has its ultimate ceiling. In the long run it will be the control of population which will offer the only opportunity of improving the living standards. The present demographic trend in Bangladesh will bring the ceiling earlier than in any other country. Plans must be formulated and enacted now in order to avert disaster. The hope lies in bringing up a new generation - a new Man who will appreciate thoroughly the crucial importance of controlling population and who will practise family planning as a code of survival. Here again the pre-requisite is teaching and reasoning. The process may be expedited by the provision of material incentives and clear economic policies offering better income distribution whereby the connection between smaller families and progressively higher standard of living is made visible and meaningful.

Before leaving the discussion on development, one final warning must be raised that all development efforts must respect the laws of nature. We must not venture on such programmes which will disturb the bio-spheric equilibrium. Our actions must be in complete agreement with the ecosystem of which we are a part. If we ignore the demands of the eco-system we would only be threatening our own existence in the long run.

Chapter 12

INTERNATIONAL EXPERIENCE IN DEVELOPMENT

Perplexed with the basic problems of food shortage and stagnant production coupled with fixed land and exploding population, it may be worth while for a planner in Bangladesh to review the efforts and corresponding achievements in other countries where similar problems existed or still do. The objective, however, should not be to copy a model but to abstract lessons and derive fresh inspirations for a pragmatic approach towards the existing reality.

Amidst the desperate search in the Third World for a more meaningful and appropriate concept of development, the experiments in India and China have attracted much attention. India and China, the two most populous countries in the world, have had many problems and socio-economic characteristics in common. Both the countries are of very ancient origin, both are rich in cultural heritage and tradition, both have undergone a long period of colonial exploitation and both have had feudal social economy. However, since their respective independence, more precisely since the 1950s, the countries have been following two remarkably different development strategies and programmes emanating primarily from their respective fundamental social commitments and political ideologies, and the subsequent development concepts. A comparison of achievements and failures in these two countries may

illuminate our thought processes.

As former hinterland of western colonization both India and China started with the same problem of undeveloped agriculture and the resulting food shortage and hunger. Initially both the countries were predominantly agrarian in their economic structure and were bestowed with similar resource bases. We may therefore concentrate mainly on the performance of agriculture in these two countries as the major indicator of success in solving their basic problems.

Both India and China were beset with the limited scope for the geographic expansion of their cultivable areas. The inevitable choice for both of them was therefore to increase agricultural production through intensive cultivation and higher land productivity (higher yields per unit of land). In the common objective of intensive land use and cultivation, the Chinese strategy and technique has proved to be superior beyond any shadow of doubt. Cropping intensity (percentage of gross sown area to cultivated area) in China increased from 134% in 1952 to 140% in 1965; whereas that in India increased from about 113% in 1954-55 to about 115% in 1963-64.¹ Similarly, agricultural yields particularly in food-grains in China remained far too high^{er} during the 50s and the 60s than those in India (see Table 12.1).

¹ Bandyopadhyaya, K., Land Yields and Agricultural Inputs in China and India during 1950s and 1960s, China Report, Vol. IX, No. 3, May-June 1973, New Delhi, India, pp. 41-52.

Table 12.1 Food-Grain Yield in India and China
(KG. per hectare)

		1952-53	1957-58	1964-65	% increase between 1953-65
Rice	{ India	775	798	1046	35
	{ China	2050	2288	2516	23
Wheat	{ India	774	673	898	16
	{ China	621	729	723	17
Potato (converted grain equivalent)	{ India	1984	1500	1854	- 7
	{ China	1597	1776	1743	9
All food grains	{ India	614	611	671	24
	{ China	1176	1324	1360	16

Source: Land Yields and Agricultural Inputs in China and India by K. Bandyopadhyaya, China Report, Vol. IX, No. 3, May-June 1973, pp. 41-52.

Although wheat production has a better yield rate in India than that of China, it has little impact on the total picture because wheat in India accounts for only 15% of the total acreage under good grain. Rice production in India which occupies 31% of the food-cropped area is pitifully below that of China in terms of yield per unit of land.

The excellence of the Chinese agricultural performance is credited to the comprehensive reforms which were introduced both in the method of production (production relations) as well as the techniques of farming. Instead of leaving the agricultural innovation and improvements at the hands of the 'enterprising' and 'accumulative' rich

farmers, the Chinese government used the social energy of the poor and lower-middle peasants to rapidly organize new forms of production units and pressed on for higher agricultural production as quickly as possible with the help of the 'Eight-point Charter for Agriculture': deep-ploughing, irrigation, close-planting, tool-improvement, adequate manuring, good seed, plant protection and field management.² Indian agriculture is also claimed to have undergone significant improvement in the application of high-yielding variety (HYV) seeds, increased use of fertilizer and plant protection culminating in a so-called "Green-Revolution"; but whether the goods have been delivered or not is a popular question today. The following discussion will perhaps provide some of the answers.

China has been using, on traditional lines, much larger quantities of organic manures per unit of land than India. The use of organic fertilizers in China increased from 5.2 ton per hectare in 1952 to 6.8 ton in 1965, whereas India used a meagre 0.6 ton per hectare and 0.9 ton per hectare of composts in 1952 and 1965 respectively. The use of chemical fertilizer (NP_2O_5) in China has increased from 2.2Kg per hectare of sown

² Dickinson, H., Rural China 1972, A Report for the Commission on the Churches' Participation in Development, World Council of Churches, Geneva, mimeo, Edinburgh, Dec. 1972, p. 2.

It is redundant to point out here that the eight-point principle of agricultural development in China has no ideological content. Any determined leadership of any political colour which aims at agricultural development can adopt this policy.

area in 1952 to 22 Kg per hectare in 1965, while in India it was 1.8 Kg per hectare in 1960-61 and 10 Kg per hectare in 1968-69.³ It must be noted here that although the use of chemical fertilizer has increased tenfold in China, it is still insignificant in proportion to the organic manures.* The most commonly used fertilizers in present day China are human waste, farm yard manure, compost, green manure, mud and silt, and wood ash. During the past two decades India has been making attempts to utilize town and village composts but the production is still small in comparison with the potential. And due to the obvious social stigma human excreta has remained out of use. The failure to use human excreta for productive purposes is one of the most notable examples of waste in India and elsewhere, particularly in view of the poor peasants' lack of financial capacity to pay for the chemical fertilizer. While in China every effort is made to minimize the use of agricultural chemicals, in India the poor peasant is given to understand that agricultural chemical is the 'unmixed blessing'.

³ Bandyopadhyaya, K., op. cit., p. 46.

* Harold Dickinson reports that most communes visited used between 10-30 per cent chemical fertilizer as additives to the manures. Dickinson, H., op. cit., p. 20.

In 1956 the Indian Delegation to China on Agricultural Planning and Techniques reported that about 85% of the total cultivated area in China is manured through organic manures. The team estimated that some 50% of the manure used is night soil and stable manure, 20 to 30% compost and 10 to 15% green manure. Cf. Freedom from Hunger Campaign/Basic Study No. 10, UN/FAO, Rome, 1967, p. 101.

The proportion of area under better seeds in China increased from 6.2% in 1952 to 55% in 1957. The importance of better seed has been realized in India also such that the percentage of all area under improved seeds jumped from 1.3% in the 50s to 25.6% in the 60s.⁴ But the break-through in plant-breeding has been very selective - it has been a seed-revolution in wheat only. Rice, the major food-crop, has not received much attention; non-food crops and coarse grains have hardly been touched.

"If rice productivity had shown anything comparable to that of wheat (comments Ladejinsky) India would have been self-sufficient by now."⁵

In the field of tool-improvement China's achievements have been exemplary in terms of quantity, variety and appropriateness. During the late 50s and early 60s the entire Chinese nation was thoroughly engaged in tool reform. According to Chao's estimate the number of improved farm implements increased from 690,000 in 1953 to about 30 million in 1964. The variety of improved tools is also commendable. The type of improved tools expanded from 13 in 1957 to 60 in 1964.⁶ In India the importance of improved tools and implements was stressed alright but the Government failed to emphasize the appropriate type of tool-development. As a result there has been mentionable progress in power-driven machinery

⁴ Bandyopadhyaya, K., op. cit., p. 47.

⁵ Ladejinsky, W., Ironies of India's Green Revolution, Foreign Affairs, Vol. 48, No. 4, July 1970, p. 761.

⁶ Chao, K.I., Agricultural Production in China, Wisconsin University Press, USA, 1970, p. 101.

like pump-sets (electric/diesel), power tillers, tractors, etc., which has eaten up resources, displaced labour and strengthened the arms of few at the cost of many, while no large scale too-improvement could be achieved for the mass peasants.⁷

Dr. (Miss) Bandyopadhyaya informs us that in 1952-53 per capita food grain production in China and India was 247 Kg and 168 Kg respectively. In 1970-71 the per capita food grain production figure for China and India stood at 246 Kg and 197 Kg respectively.⁸ This indicates that while China is approaching the ceiling of productivity in a given technology, India has much more room to expand but is obviously unable to reach the possible level. There is a gulf of difference between the productivity levels of these two countries particularly in rice. Besides, the growth rate achieved so far in the agricultural production in India is not satisfactory in view of the population growth.

There is one more basic issue which needs to be brought to the surface. That is, even if India succeeds in reaching a targeted level of production by emphasizing productivity, as she is doing now, will it mean much to her hungry millions? Given the highly inequalitarian social structure and economic relations in India, an increase in per capita production cannot be assumed to

⁷ Bandyopadhyaya, K., op. cit., p. 50.

⁸ Bandyopadhyaya, K., Agricultural Production in China and India, China Report, Vol. IX, No. 2, March-April 1973, pp. 31-39.

mean any increase in consumption for the vast majority of Indian population. Such an issue is irrelevant in the context of China, for in China the distribution system assures an equitable share in consumption and the consumable surplus. This has been made possible by collectivization of the rural settlements into a new form of productive organization reinforced by a befitting social organization, comprehensively dubbed as commune.* These communes with their sub-divisions of Brigades and Production teams, provide the individual peasant with a living and working unit which he can comprehend, with

* Communes emerged out of four distinct stages of organizational developments. First "Mutual Aid Teams" were formed of small groups of peasants who shared their tools and the tasks of cultivation and ran stocks in common, having individual ownership of land which was transferred to them from the landlord class under the Communist command between the late 1930s and 1952. These Mutual Aid Teams grew into "Semi-Socialist Co-operatives" of some 20 or 30 households who carried out mutual aid in more integrated fashion. In order to facilitate major works of land improvement larger units of 100 households or more were organized and "Advanced Socialist Co-operatives" were set up. Finally, again with a view to overcoming the limits of size and organization, the Advanced Socialist Co-operatives were regrouped into "People's Communes". At present there are 78,000 communes which are joined to the central government through 2000 counties in 22 provinces. Under each commune there are between 5 and 25 Production Brigades which are sub-divided into between 5 and 20 Production Teams. Natural villages are the bases of Brigades or Production Teams. Production Teams may include 30 to 100 households. The connection of the communes with the state, through the County and Provincial authority, is primarily concerned with the planning of production of grains and proteins, the collection and distribution of surplus, taxation and the supply of artificial fertilizers. For further details see Dickinson, H., op. cit.

which he can identify himself, and in which he has a reasonable chance of participating in management.⁹ Based on the principles of self-reliance, the communes emphasize the use of local materials in intensive agriculture and the everyday necessities of life. Establishment of factories at local level has tied their production primarily to the local necessities and has thus enhanced autonomy at the local level. This strategy has further reduced the demand on the national capital investment fund as well as on distributive transport. It is through this collectivized settlement and productive organization that the Chinese Government have been able to mop up agricultural surpluses which otherwise would not be possible even with high agricultural taxation.

In reorganizing the rural settlement system and social structure as the two inseparable components of productive organization, China has in fact maintained and further reinforced a continuity of her culture and civilization. Throughout her history China has remained agrarian; and even today most (80%) of her 750 million people are rural farmers distributed over 7800⁰ communes. X Development of the communes has been one of the most important experiments in applied planning. In operational terms communes are the organizational and physical dimension of the Chinese national planning,[✱]

⁹ Dickinson, H., op. cit., p. 50.

[✱] In Chinese planning the centre draws up a unified production plan and decides the fiscal and budgetary policy for the country as a whole. The Provincial Planning /

an aspect which is so lamentably lacking in many centrally planned societies. As for their contributions Harold Dickinson, on the basis of his personal visit to China in 1972, holds that the semi-autonomous communes have provided China with solutions that also affect other parts of the world.¹⁰

India, on the other hand, has clearly failed in bringing about the required changes in her rural social structure and productive organization in agriculture. Under great economic pressure in the 1960s the Congress Government of India gave priority to increasing production through the "blessings of the Green Revolution". The emphasis has been on productivity to the exclusion of organizational and social imperatives. As a result growth of an unusual kind is taking place which, as suspected by T.J. Byres, may be stopped short by several bottle-necks operating singly or together.¹¹

(Footnote contd. from p. 321)

Planning Committee collates the provisional production plans and fixes quotas in terms of both production and profit. The Province also bids for resources which are made by other authorities. The communes then prepare detailed plans to meet the quotas fixed by the state using resources under their control and the ones supplied by the state. The communes are allowed to keep for their own purposes any surplus they produce above their quota.

¹⁰ Dickinson, H., op. cit., p. 50.

¹¹ Byres, T.J., The Dialectic of India's Green Revolution, South Asian Review, Vol. 5, Jan. 1972, pp. 99-110. Referring to 104 individual contributions to the debate thrown up by the "Green Revolution", T.J. Byres at SOAS, London, isolates the following bottlenecks: (i) limited range of the new high yielding seeds, (ii) the new strains are disease prone, (iii) increased output hinges upon the application /

After a quarter century of self-rule and planning, Indian politicians and bureaucrats have not been able to carry out the imperative changes in the agrarian institutes. Abolition of Zamindari, Tenancy Regulation, Consolidation of holdings, Panchayati Raj, Community Development, Land Ceiling Regulation, Credit - all of these reform measures have remained notional.* The system of tenancy, sub-tenancy and share cropping is still widespread and the lot of the weak cultivating and labouring class is unaltered.

(Footnote contd. from p. 322)

application of fertilizer which would depend on adequate supply (home-made or imported), the problems of price, of incentives and the threat of pollution, all in combination will constrain optimum usage, (iv) the chances of control slipping from public hand to private entrepreneurs whose private profiteering will exacerbate the crucial issue of employment which may spearhead a conflict between urban and rural.

* Phani Mitra reports from Bombay that a Chief Ministers' meeting, convened by the Centre (New Delhi) has dispersed without any time-bound commitment to implement the election promise on land reform. See Mitra, P., India's Search for New Economic Strategy, South Asian Review, Vol. 5, No. 4, July 1972, p. 285.

In Uttar Pradesh the result of the ceiling programme has suffered a complete failure - informs Richard Newell. Less than 0.4% of the cultivated land has been redistributed and as much as half of those (200,000 acres) is not suitable for cultivation. Under the present provision of ceiling (40 acres) even if all the surplus land were redistributed, the per capita share of the landless would be only about 0.04 acres (on the basis of 1951 census). Most of tenure holders completely avoided the laws provision. See Newell, Richard S., Ideology and Realities: Land Distribution in Uttar Pradesh, Pacific Affairs, Vol. 45, No. 2, Summer 1972, pp. 220-239.

Under the circumstances of unprepared settings, the benefits of Green Revolution have become very unevenly distributed. Great social inequality resulting from the inequality of basic resource distribution and other cultural constraints has resulted in the widening gap in the benefits accrued. Credits and inputs distribution in India is biased, as expected, in favour of the affluent and more influential. Thus most of the profits have gone to the middle and large scale farm operators and very little apparent benefit has accrued to labourers or small holders in the high yield areas.¹² Events in India have demonstrated the country's failure in combining increased production and greater social justice. On the contrary it has become quite visible that increases in the productivity has accentuated polarization of income, which in turn has bred social unrest.* The undesirable effects of the new technology is basically due to the rural social organization itself including its economic, political and religious order. This long-standing basic issue has apparently not been solved in India.

The Indian Government has not been able to hold the tide of mechanization at bay. While the new technology expanded the demand for labour input in the way of double cropping, intensive plant care and greater volume of

¹² Newell, R.S., op. cit., p. 221.

* In the first nine months of 1969 there were 346 cases of forcible land occupation with many killed and injured in the State of West Bengal alone - as reported in Ladejinsky, W., op. cit., p. 766.

harvests, etc., the demand has been wiped out largely by indiscriminate mechanization. The concerned technical economists and the social policy planners have perhaps had their last ineffectual word in the Fourth Plan on developing the right technology from the point of view of employment and social equilibrium. The fact that the problem of employment has suddenly exploded in India as the most important development problem of the 1970s bears testimony to the reality that has surfaced in the current decade:

"Unemployment and maldistribution of wealth are now at the centre of the stage in the drama of economic development."¹³

Yet, in some corners it is held that the problem of employment in India is being used as a surrogate for the real problem which is the basic poverty of landlessness of the mass of peasants.¹⁴ In an agricultural economy like that of India the problem of raising the level of living is not one of finding employment but of creating an access to the inputs of production, the most basic of which is land, and of raising the productivity of those inputs. Land reform which would provide peasant holdings of a size adequate for a family to run and be engaged throughout the year, would wipe out unemployment on the one hand and increase labour-input and output per acre

¹³ Lele, Uma J. and Mellor, John W., *Jobs, Poverty and the Green Revolution*, International Affairs, Vol. 8, No. 1, January 1972, p. 20.

¹⁴ Mitra, P., op. cit., p. 287.

on the other. This proposition ties back to the initial issue of agrarian reform.

Summing up, it can be said that the "Green Revolution" in India has proved to be at once "a cornucopia and a Pandora's Box",¹⁵ as Dr. Wharton has so succinctly phrased. And because the

"propitious circumstances in which the new technology thrives are not easily obtainable and hence there are inevitable constraints on its scope and progress,"¹⁶

the fears of Byres, Ladejinsky and many others are becoming a reality - a post-mortem of the Fourth Plan reveals serious shortfalls in the relevant areas. Food grain production in 1972-73 stood at only 110-112 million tons, forcing the Government to import 2 million tons of food grains. The target of 1973-74 also seems unattained.¹⁷

As expected, mal-performance in Indian agriculture and the eventual shortfall therein has created severe impact on the other sectors of the economy. Large scale

¹⁵ Wharton, C.R., The Green Revolution: Cornucopia or Pandora's Box, Foreign Affairs, Vol. 47, No. 3, April 1969, pp. 464-476.

¹⁶ Ladejinsky, W., op. cit., p. 758.

¹⁷ Hone, Angus, India's Fifth Plan: An unconvincing approach, South Asian Review, Vol. 7, No. 1, October 1973, p. 63.

Reports from within India also bear testimony to the continued failures. Dr. C.T. Kurien, Professor of Economics at the Madras Christian College, is reported to have commented that after planning for development for 25 years, India finds itself with half its population living below subsistence level, in poverty quite unprecedented in the country's history. See The Ecologist, Vol. 3, No. 6, June 1973, p. 207.

industries and the export sector based on agro-crops have been the initial victims. Small-scale industry and the rural works-programme is also inescapably affected. While the public sector has failed to save capital,¹⁸ the accumulative Indian Kulaks have, ~~supposedly~~^{presumably}, not released resources on favourable terms to the non-agricultural sector in the fear of being taxed.* Consequently there has been shortfalls in industrial production and investments. As a result of slow industrial growth, import of steel and fertilizer, in addition to cotton and soya bean, had to be stepped up which has thrown the balance of payment mark from a tolerable position to once again a vulnerable one.

Reportedly the Fifth Five-year Plan of India is showing the symptoms of confused thinking.¹⁹ An impressive array of economists and policy-makers are becoming sceptical about the prudence of devoting all effort towards maximizing the rate of growth for a hypothetical redistribution at a later date. Apparently

¹⁸ Ibid., p. 65.

* Ladejinsky has brought to notice the appearance of a new breed of farmers in India composed of retired military and civil servants, doctors, lawyers and businessmen, most of whom have unemployed money acquired through undeclared earnings. Most of them look upon farming as a tax haven and a source of high supplementary income free of any tax burdens. This obvious advantage of tax support is absent in urban/industrial investment. For further clarification of the point see Ladejinsky, W., op. cit., p. 762; and Byres, T.J., op. cit., p. 110.

¹⁹ Mitra, P., op. cit., p. 286.

Mrs. Gandhi has also questioned the 'growth based theories' and has come out for a frontal attack on poverty (Garibi Hatao). But the plan shows an amalgam of different approaches towards different problems like poverty, unemployment, growth and self-reliance perceived and considered in isolation of one another. It may be pointed out here that the diety of growth itself is not to be questioned as much as the inroads it has been allowed to make. In the pursuit of growth in agriculture, the government in India has, perhaps inadvertently, facilitated the emasculation of the Indian Kulaks. Whatever the Government did in the way of distribution of inputs ended up in benefiting the rich and the powerful. The rich farmers have demonstrated their natural genius, power and influence in usurping the Government distributed inputs, in their tactful evasion of land ceiling regulations and successful sabotage to agricultural taxation. In view of their increasing power and influence, it is only conceivable that they will continue to place their interest at the top of everything else under the existing political economy of India.

It is therefore no more difficult to see that in the framework of existing social organization and economic management there is hardly any room for the political slogan of 'Garibi Hatao' to materialize into a reality of more available food, more employment or more equitable distribution of the consumable surplus. In this connection it is strongly believed in some quarters in

India that a frontal attack on poverty will not alter the character of growth unless they are accompanied by a thorough transformation in the socio-political system entailing a drastic redistribution of income, assets and control over institutions.²⁰ Vitally important as it is, this aspect of planning in India has persistently remained beyond public endeavour. Indian planners and policy makers have hardly cared to carry the national plan through a socially desirable and locally workable mechanism. In the words of Streeten and Lipton,

"They (the Indian planners) over-emphasize the big aggregates...and neglect detailed and concrete analysis of social and economic microcosms."²¹

Apparently Indian planning is very sophisticated in quantitative macro-modelling, but its greatest weakness has always been in the implementation, more precisely in the mechanisms of implementation. Small scale implementation planning at the village level barely exists in India. If the central plan was disaggregated and

²⁰ Shourie, A., Growth and Inequalities: Need for Major Political Transformation, The Statesman, January 4, 1973, New Delhi.

²¹ Streeten, P. and Lipton, M., Crisis in Indian Planning: Economic Policy in the 1960s, Royal Institute of International Affairs, Oxford University Press, London, 1968, Ch. 1, p. 7. Streeten and Lipton hold that the lack of small-scale, local analysis and planning is the real cause of the concentration of planning on public investment aggregates. Such concentration produces the incorrect belief that maximum investment produces maximum growth and that there is always a conflict between equality and growth. They further suggest that a big shift of emphasis is needed: from aggregate targets to comparative analysis of local situations.

examined at local levels analyzing the probable rate of return to the individual producers and the distribution of income and of cost, the bottlenecks would be identified and the corresponding socio-political imperatives would automatically become clear.

In this regard the Fifth Plan seems to have no better promises. For example, the Indian Planning Commission (in its publication: Approach to the Fifth Plan 1974-79) has put injunctions on indiscriminate modernization, but it has not been indicated how the Indian Kulaks will be prevented from mechanization. On the issue of implementation Angus Hone observes that there has been no signs of an overall improvement so far, and reviewing the "approach" document of the Fifth Plan he concludes that there is no indication that the Fifth Plan will see anything better.²²

It must therefore be questioned whether India's development experience can offer positive guides to the problems of the Third World. India's experiment in so-called democratic planning has remained flagrantly devoid of democratic elements - planning cannot be called democratic unless the corresponding tools of implementation are also democratic, and unless the planning process ensures popular participation. In India there is still widespread illusion that successful economic development by itself is capable of establishing sufficient consensus for the satisfactory functioning of the democratic

²² Hone, A., op. cit., p. 67.

institutions.²³ While such optimism is on the wane, Chinese social and economic pragmatism has established a reverse lesson: that institutional development is a prerequisite to successful economic development and that if a nation is pragmatic, its development goals and political ideologies may be made complementary, one reinforcing the other. China's leaders insist on the highest degree of economic vis-a-vis political self-reliance and this principle has been the guiding light in China's domestic economy and foreign trade. Following the Soviet withdrawal, China engaged herself in mobilizing her own manpower - the only untapped ubiquitous resource in plenty. Ever since, China has become increasingly self-sufficient and has paid off all her debts, gradually turning to trade. China's foreign trade is very nearly balanced at any time - observes W. Klatt because of the balanced policy: export is for import and import is for the country's socialization, such that the volume of purchases abroad is closely tied to the availability of goods suitable for export.²⁴ One more healthy sign in the Chinese economy is that foreign trade does not figure in the planner's mind as an integral part of the nation's economic activity but rather as a subsidiary which is capable of expansion or

²³ Hanson, A.H., *Power Shifts and Regional Balances in Streeten and Lipton*, op. cit., p. 54.

²⁴ Klatt, W., *China's Domestic Economy and Foreign Trade*, China Report, Vol. IX, No. 3, May-June 1973, pp. 30-40.

contraction without damaging the national economy either way.²⁵ This is why there had been no internal borrowing in the recent past and no inflation since 1952 in China. "There must be no other country in the world," comments Britain's Chancellor of the Exchequer, Mr. Denis Healey, "where prices quoted in a 1950s guide-book are still correct."²⁶

In India on the other hand, notwithstanding the overall perspective of self-reliance, self-sustaining economy, egalitarianism in wealth sharing and cooperative method of production, the state of politics so long made the shift of policy from self-sustaining growth towards rapid growth unavoidable. Rapid growth necessitated capital borrowing. In the last decade India has traded with so many countries and has received so much of expert specialists' services in her development problem yet her trade situation and debt remained precarious. India is not nearly as self-sufficient as China - after a quarter century of self-rule she still needs and seeks foreign aid in various forms and large sums.

One fundamental reason behind this differential of success in terms of self-reliance and self-sustained growth is the relative weight that these two countries have placed on the importance of social revolution and cultural reform particularly in the field of education

²⁵ Ibid.

²⁶ Healey, Denis, How China runs with No Income Tax and No Inflation, The Sunday Times, January 14, 1973.

(in its widest sense). Chinese communist party has smashed the old superstitions and fatalism replacing it with the rational view of life and the world. Yet the latent values of the traditional culture such as nationalism, pride, dedication, self-sacrifice, spirit of work and thrift, have been so cleverly utilized towards productive operation on a national scale through effective local organization, leadership and mobilization. Such a selective transformation is yet to take place in Indian society and culture. The attitude towards education in China has undergone a tremendous revolution: education not as a privilege to a small elite but for the masses, education for productive pursuits not for social mobility. India is yet to undergo the much too needed educational reform.²⁷ In India education, particularly higher education, is a passport to the elite's world; manual labour is not for the 'educated beings'.

The spirit of cooperation, sharing and mutual benefit has been inculcated to such an extent that there is no visible incompatibility in the individual goals, objectives and pursuits. There is no clashing interests

²⁷ Richman, Bary, Economic Development in China and India, Pacific Affairs, Vol. 45, No. 1, Spring 1972, pp. 75-91. Basing the estimates of China's economic performance on a wide variety of sources including a personal visit to China and India in 1966 and 1968-69 respectively, Bary Richman concludes that China has thus far achieved a significant lead over India in all economic development - in both absolute and per capita terms. Bary Richman examines the fundamental differences in the educational aim, methods and accomplishments as the single most important variable in explaining the differential success of these two countries.

or conflicting social groups. Such a social development has remained only a Gandhian dream on the soil of India. Indian leadership has also failed to spread Gandhi's gospel on thrift, prudence and a level of content. In India the state does not uphold the ideals of frugality and prudence; on the contrary, the bureaucrats and politicians often set the examples of prodigal and pageantry. In China the state and the leadership rather than the individuals tend to practise the ethics of prudence and thrift by replacing private thrift, accumulation and investment with state investment in order to expand production.²⁸

Through youth mobilization China has achieved phenomenal success in bridging the gulf between the town and the country. The cultural level of the countryside has been raised by the zealous influx of millions of China's better educated manpower to the rural life. Not only that, the Great Leap to rural life has also brought new revolution in the economic horizon of China. It is reported that young people from Peking who have settled in inner Mongolia have learnt to grow more than twenty different kinds of crops, and others have set up more than a thousand agricultural research groups jointly with local peasants.²⁹ Thus the Chinese youth are

²⁸ Richman, B., op. cit., p. 83.

²⁹ Gittings, John, The Great Leap Backward to Rural Life, The Guardian, April 3, 1973. Gittings reports that since the cultural Revolution of 1966, more than seven million educated youth have settled in the rural areas and the figure for 1973 is expected to be well in excess of a million.

helping to expand the agricultural frontiers and liquidate youth unemployment, and defuse urban population explosion, while fulfilling the basic goal of cultural democratization.

In India, the prevailing educational system and the contents of education, and the value system of the society and its leaders, have not prepared the Indian youths to be useful to the country's basic problems. Largely due to the lack of attitudinal reform towards education, work and basic goals of life, there is large scale unemployment and aimlessness among the high school and university graduates. Further, in the absence of any effort at cultural democratization, the split society of India is further split along the lines of urban and rural, sophisticated and rustic. Today an educated young man from Bombay and a peasant youth from a village in Madras placed side by side would give the impression of representing two entirely different cultures. Economic inequality is perfectly matched by cultural inequality in India, which only confirms Marx that the cultural conflict is economically based.

In order to minimize economic inequality Mrs. Gandhi has committed herself to the 'Garibi Hatao' movement. But from the evidence of the past behaviour of the Congress Government, it is foreseeable that the latest Plan will be decorated with few ornamental programmes and then the Government will sit back with complacency that necessary steps have been taken. And thus crucial time would be lost, because evidently the correction in social

management is a race against time - the longer corrective steps are delayed, the worse the defect becomes.

From the foregoing discussions on the development experience in two countries, certain clear lessons emerge, the most prominent of which is that for a sustained national development certain conditions must be fulfilled in the various aspects of national life - socio-psychological, cultural, political and techno-economical:

(A) The most primary of all conditions in the context of an agrarian society is an equitable distribution of land. Differential access to land, which is the basic and the most important resource in an agrarian economy, creates forms of social and political inequality and the accompanying cultural symbols which work in combination to petrify economic inequality.

(B) A comfortable political ideology may be accepted as 'Sacred Cow' only to camouflage the inherent struggle but at the cost of social unrest, potential or real. Political ideology should, on the contrary, be made subservient to national requirement of production and consumption. Political system is to serve the society, not the other way around.

(C) Planning, in order to be democratic, must be brought down to the people in its processes and implementation. This will not only help to liquidate the extreme bureaucratization of society, it will make the plan more realistic in uncovering the potentialities and bottlenecks at the grass root level of implementation.

(D) A selective cultural revolution identifying and nurturing those latent values which are conducive to productive pursuits is indispensable. Such a revolution must be geared towards instilling a sense of nationalism, common purpose, dedication, pragmatism and willingness to work.

(E) Delay and soft-stateism in carrying out the imperatives only prolongs the miseries on the one hand and hardens the reactionary forces on the other. Reform and revolution demands bold action at the earliest.

Chapter 13

DEVELOPMENT THROUGH FOOD PRODUCTION

- a lesson for Bangladesh

The priority and urgency of agricultural development in Bangladesh primarily focussed on food production can never be over-emphasized. Arguments in favour of emphasizing agricultural development are perhaps more numerous in the case of Bangladesh than anywhere else. The indigenous resource base, technological base, population dynamics, scope of economic activity, cultural heritage and spiritual/ideological aspirations - all make a combined demand on agricultural development. The accumulated experience on development both in the remote and recent past only confirms such a position.

A review of the world's great urban revolutions makes it clear that these were basically agricultural revolutions - improvements in the ability of the peasant population to produce excess food gave rise to a surplus which could be used to feed people engaged in non-agricultural activities. The process of British Industrial Revolution proceeded uninterrupted because an agricultural revolution on food production was in progress. To ensure the success of the Soviet Industrial Revolution, it became necessary to undertake an agricultural revolution. Recently China has shown it emphatically that no nation can make any headway in industrialization unless it feeds its people. Many developing countries, on the other hand, opted for

rapid industrialization producing export goods without an assured agriculture development, in the Rostowian inspiration that this will bring about the economic "take-off"; and that the export will earn them enough foreign exchange to pay for the imported food. Such a strategy proved workable where the basic resource consisted of oil or other mineral resources; but it has resulted in disastrous consequences elsewhere. The neglect of agriculture led to serious reduction in the flow of raw materials which in turn reduced export volume and the subsequent earning. The situation is aggravated by the import of food and industrial raw material. Finally the import of capital equipment is constrained by limited foreign exchange which retard growth in both the agricultural and non-agricultural sectors.¹ Even in the countries where export based take-off did work, there was not much sense in using up the hard-earned foreign exchange in paying for the imported food. Besides there is not much wisdom in exposing the supply of food of a Third World country to the vagaries of market forces of a politically volatile, economically compartmentalized and emotionally divided world.

In the light of experience across the world it is fairly conclusive that the expansion of agriculture is a basic condition for ensuring the development and fulfilment of any economic plan. In the context of the Third

¹ Provisional Indicative World Plan for Agricultural Development, Summary and Main Conclusions, FAO, Rome, 1970, p. 4.

World countries, Tarlok Singh asserts that agriculture remains at the centre - the national economy will advance in the measure in which the growth of the greater part of the industry supports and is derived from agriculture.² The crucial importance of agriculture in general may be summarized in the following premises:

Agriculture supplies the intermediate and/or final products which form the means of subsistence for not only the agricultural population but for the non-agricultural population also.

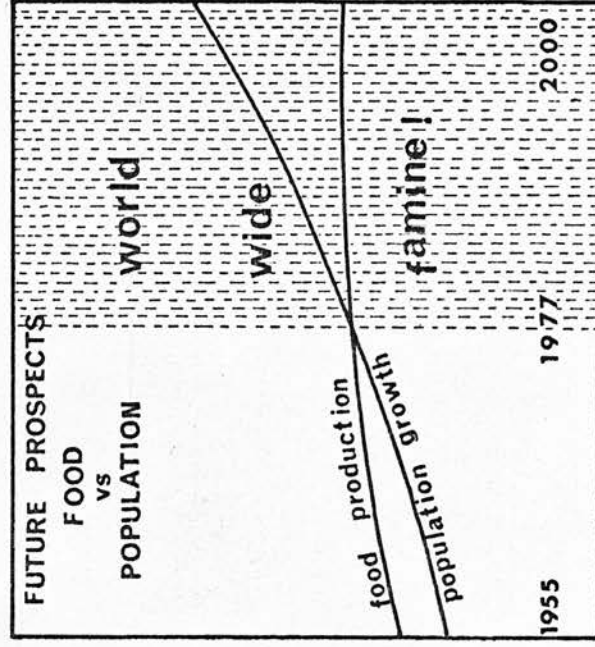
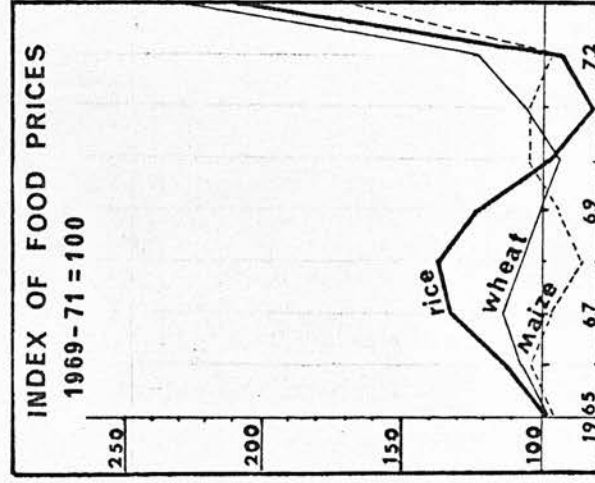
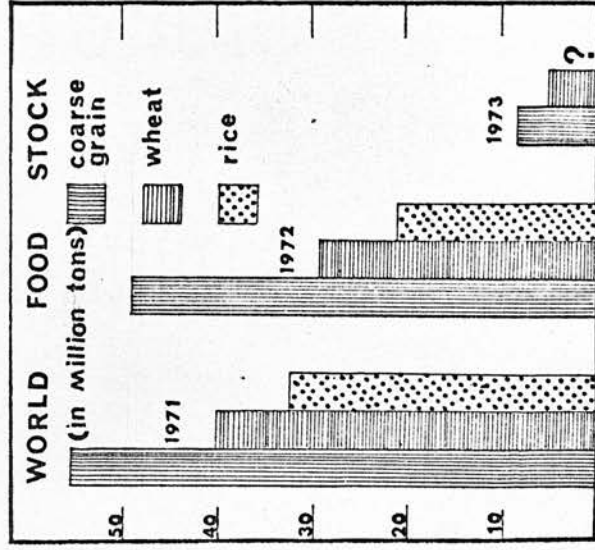
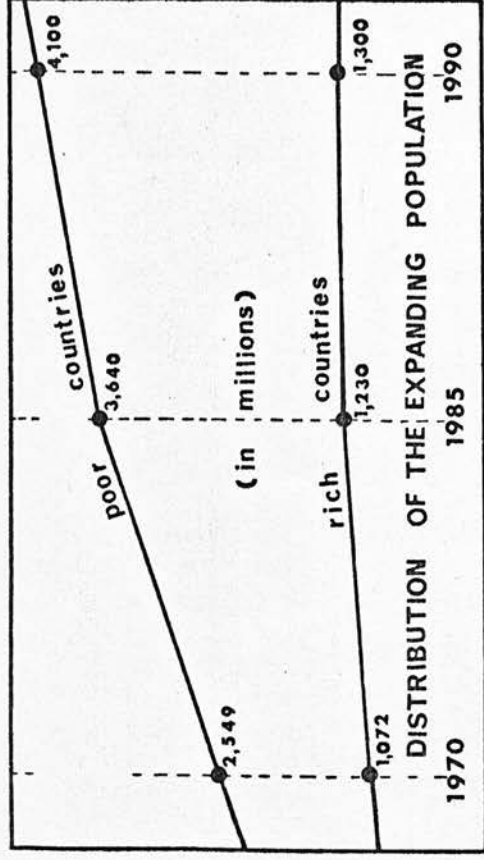
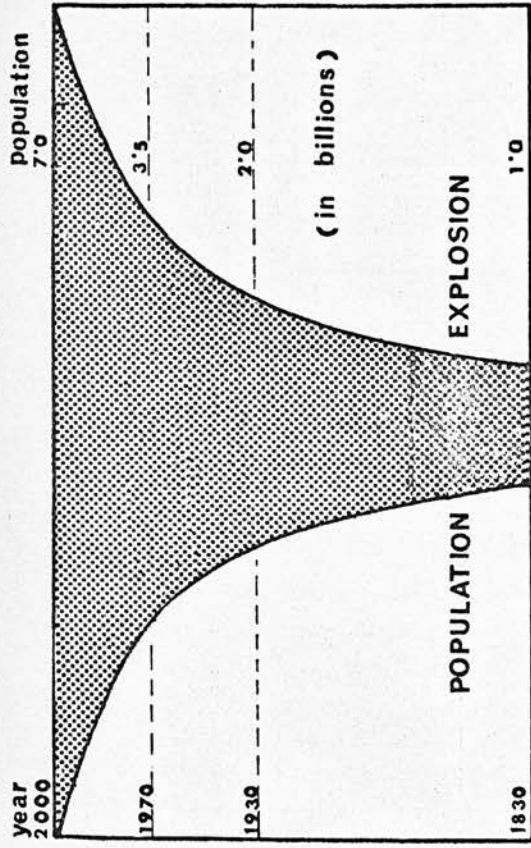
Agriculture supplies the intermediate and/or final produce which is traded for foreign exchange or capital equipment.

Agrarian sector offers a real market for the industrial goods - an expansion in agricultural sector would mean an expansion in the industrial market.

Given the scope of increased productivity, agriculture can contribute to sustained overall development by giving up surplus food, labour and capital in favour of industrial expansion.

These are some of the basic observations which reinforce the importance of rapid and sustained development of agriculture as an essential condition for the self-sustained development of an economy.

² Singh, Tarlok, Planning the Rural Sector in Robinson, R. (ed.), Developing the Third World, Cambridge Commonwealth Studies, Cambridge University Press, 1971, p. 136.



source: The Guardian Extra
July 12, 1974, p14

source: CERES, FAO Review
vol.7, No.2, 1974, p7

source: Famine, can we survive?

Ambassador College, Calif. 1969, p20

Fig. 13.1 World Situation : Population vs. Food

Bangladesh has a natural resource base which provides a clear potential for an accelerated increase in agricultural production. If the land resource is made progressively productive then there will be not only food for the growing population but also agricultural exports to pay for the necessary import of the capital equipment as well as the development of infra-structure. An alternative would be to boost manufacturing of export goods and import of food grains. What can Bangladesh manufacture? With hardly any mineral deposits the country can either import raw materials or be content with processing the local agricultural produce. Even if the country succeeds in obtaining some cheap raw material and thereafter process it very cheaply, where can those "sub-standard goods" be sold? Can an infant industry in Bangladesh compete with a matured industry in an advanced country? Obviously therefore manufacturing will have to be for the domestic consumption which implies that the domestic market will have to be created and continually expanded as a pre-requisite to industrialization.

The other proposition, i.e. the import of food grains must be ruled out right away. Import of rice from South Asian countries is out of the question because of the widening cereal gap in that region itself.³ The only

³ In the IWP for Agricultural Development, 1970, the FAO has brought to the world's attention that cereal imports by countries covered by Asian Regional Studies approximately doubled between 1959-61 and 1964-66 reaching a record total of 14.5 million tons in 1966 compared with only 7 million tons in 1959. The shortfall in 1985 in Asia /

alternative would be to import it from the surplus countries which are obviously high cost and high income countries like the U.S.A., Canada or Australia; and as such the financial (foreign exchange) burden would be absolutely unbearable particularly when the energy cost is soaring at an unprecedented rate.*

It is sometimes argued that over a long period of time agricultural development leads to downward trends in the prices of agricultural commodities. Surely such an outcome would depend on the system of distribution and consumption as well as the level of living in a particular country. For instance, income elasticity of demand for food in the well-fed countries like U.S.A., U.K. and Western Europe is remarkably low compared to that in India, Pakistan, Thailand and other ill-fed countries including Bangladesh. In the well-fed countries further development in agriculture may depress the market but there is

(Footnote contd. from p. 341)

Asia would amount to 70 million tons. For further details see Provisional Indicative World Plan for Agricultural Development, Summary and Main Conclusions, FAO, Rome, 1970.

* In a seminar held in the Department of Economics, University of Edinburgh, Professor Kindleberger expressed his doubts whether oil prices will stay at \$14 a barrel or even \$17 a barrel (see University of Edinburgh Bulletin, Vol. X, No. 9, Feb. 1974). It may be pointed out that world prices of cereals had already increased before the gigantic leap of petroleum prices in 1973. For example, the index of US export prices of rice had leapt from less than 100 in 1970-71 to about 220 in 1972-73. Similarly, the prices of US winter wheat almost doubled in the course of 1973, from \$108 a ton in January to \$199 a ton in December. - See Ceres (FAO Review) Vol. 7, No. 2, March/April 1974, pp. 6 and 7.

no chance of agricultural commodities' prices, particularly cereal prices, to fall in Bangladesh or India in the foreseeable future, because the demand for food on agriculture in these countries is indeed a long, long way from being saturated. In this regard the dictum of FAO is reassuring that the population factor alone would require an increase of 80 per cent in food supplies over the period 1972-85 in the deficit countries (Zone C), merely to maintain existing nutrition levels and patterns of consumption.⁴ As Bangladesh would hopefully try to extricate herself from the stagnant levels of calorie and protein intake, the per capita demand for food would automatically rise, making a demand on agriculture in turn. It is impossible to see how the most basic imperative^{*} of the country can be fulfilled without sustained agricultural development throughout the foreseeable future.

Yet the need to export is not diminished at all. Foreign exchange is desperately needed in Bangladesh to pay for the import or production of capital goods, or for the development of infra-structure. Here the country is faced with a cruel reality - the export market for the traditional produce, jute, has been growing, if at all, much more slowly than the rest of the world export goods. The proportion of raw jute input to finished output in

⁴ Provisional Indicative World Plan, FAO, op. cit., p. 6.

^{*} It is declared as a fundamental principle of state policy that "the State shall regard the raising of the level of nutrition as among its primary duties" - Clause 18(1), The Constitution of the People's Republic of Bangladesh, Bangladesh Government Press, Dacca, 1973.

the concerned manufacturing is diminishing as synthetic fibres are making further progress. On the other hand, the quantity of jute or jute goods required to pay for each unit of imported industrial goods continues to go up, and will still go up due to the soaring cost of production in the advanced industrial countries. However, in view of the increasing cost of production of synthetics in the industrialized countries jute can be expected to turn out competitive once again in the world market; but the issue of increasing quantity of exports remains inescapable. As pointed out earlier, the necessity of jute export in much enlarged quantity, improved quality and in guaranteed time is of supreme importance. This can be achieved only through devoting larger areas to jute production as well as enhanced efforts at improving the rate of yield and quality. The area required for the stipulated jute production can be ensured only after self-sufficiency in food production has been achieved through increased productivity and intensive land use.* The future of the country entirely depends on the single factor of agricultural productivity.

* Here it is worth reminding ourselves the warning sounded by Professor W.A. Lewis who comes to the same conclusion from a slightly different angle. Professor Lewis points out that the prices of tropical commercial crops will always permit only subsistence wages until capital and knowledge are put at the disposal of the subsistence producers to increase the productivity of tropical food production for home consumption. See Lewis, W. Arthur, Economic Development with unlimited supplies of labour in Agarwals and Singh (eds.), The Economics of Under-development, Oxford University Press, Bombay, 1960.

A major economic goal pursued almost universally is that of creating and expanding employments per se. Although the sole purpose of employment is to ensure a source of sustenance, 'employment' itself has become a cult of individuals' economic motivation, and hence the economists' obsession. The prevailing notion of employment inevitably calls for the strategy of urban employment. This conceptualization is further reinforced by the unrealistic generalization that economic development takes place in a matrix of urban locations (John Friedman) and that urban employment must be expanded at a faster rate than rural employment, regardless of a country's level of economic development and stock of capital formation.* It is well known that generating urban employment is much more capital intensive than rural employment; and this is precisely the reason why Third World countries are unable to provide employment of the preconceived type, while rapid population growth is placing intolerable burdens on their capacity. In terms of employment generation Indian performance in the past has been poor and the case

* It may be pointed out that the proportion of primary, secondary and tertiary employments in the developed western economies is a consequence of economic evolution towards maturity, not a condition for the maturity itself. In this connection Professor Edmundo Flores opines that it is essential to devise, nurture and patronize the institutions and incentives that contribute to anchoring the farm population in rural areas until they can be productively employed elsewhere. See Flores, Edmundo, Priorities in Agricultural Production and Rural Industry in Robinson, R. (ed.), Developing the Third World, Commonwealth Series, Cambridge University Press, Cambridge, 1971, p. 148.

of Bangladesh is equally miserable. The future prospects are equally bleak.*

An additional evil that accompanies the strategy of urban employment is even more disastrous and self-defeating. The popular industrial urban technology is by and large labour displacing. Automation is resorted to increasingly on the plea of capital efficiency and quality standardization and also for the ease of management. As a result the total capital outlay fails to create the promised number of jobs and urban unemployment overhangs as an ominous cloud of social unrest.

Another typical set of phenomena in the Third World that bothers the planners and economists is that of underemployment, concealed unemployment, work-sharing and zero-marginal productivity of labour. In fact all of these are related with one and the same process of adjustment of growing numbers of people on a fixed land area. So long as people's sustenance can be ensured, the cultural-ecological process should not worry anyone, for, work-sharing in a peasant agriculture actually represents an

* According to the recent FAO estimate the farm population in the developing countries has no escape in absolute terms into the non-agricultural economy during the period covered by IWP (1975-85) and that the man:land ratio in agriculture will decline as well as the land available to feed the total population. The corresponding message from FAO is also loud and clear: "A sharp increase in productivity will therefore be needed if soaring import requirements and a drastic decline in income and employment in agriculture are to be avoided." - Provisional Indicative World Plan/FAO, op. cit., p. 13.

efficient response by the micro-economic decision units to the problem of supporting growing numbers on a fixed area of land. The limit of the ability of a given amount of land to support workers continues to be set by upper limit of the total product curve and the subsistence per worker as physiologically or socially defined.⁵ The obvious implication here is to push the total product curve through improving the technique of production rather than shifting the erroneously labelled 'surplus population'. Similarly the economists have mal-observed the phenomenon of zero-marginal productivity of labour. Marginal productivity tends to be zero because an apparent increase in the labour force does not necessarily mean an increase in the labour input in real terms.⁶ It may also be true that even with actual input of additional labour no further gain in output would result under the existing technique of production; but this does not at all imply that output would not increase with an improved technique of production. However, instead of concentrating on how to increase land productivity, the exponents have so long expressed an unwarranted concern for increasing productivity of the unskilled agricultural labour. Obviously unskilled labour is no constraint in the Third World countries, decisively not in Bangladesh - why be concerned with

⁵ Robinson, Warren C., *The Economics of Work-sharing in Peasant Agriculture, Economic Development and Cultural Change*, Vol. 20, No. 1, October 1971, p. 139.

⁶ Haswell, M.R., *Economics of Development in Village India*, Routledge and Kegan Paul, London, 1967, p. 70.

labour productivity then? Since there is no opportunity cost of labour and work-sharing and concealed unemployment exists in Bangladesh it is all the more reason to suggest that hours worked per worker should be increased by introducing labour intensive techniques of agricultural expansion which would make the marginal product per labour hour positive.

Happily the goals of creating employment and raising productivity of land and man are in full compromise with that of agricultural development. Major technological improvements in the way of local irrigation, better soil preparation, composting and manuring, intense plant care and multiple cropping will undoubtedly increase labour hours required per worker and at once raise yields per unit of land and labour. The radically higher labour requirement per acre of the new rice variety in the Philippines illustrates this possibility quite clearly (see Table 13.1). The true Japanese paddy cultural method requires much more labour per acre than the peasants in Bangladesh at present employ. Planting and transplanting the seedlings in rows is a labour intensive technique which at once bears the promise of higher pay off in expanded output. Weeding and plant care is a very important factor in getting a good crop of jute which involves nothing but labour.

Obviously therefore if the strategy of agriculture-based development is followed through the expansion of labour intensive techniques, several benefits would be

Table 13.1 Labour Requirement for H.Y.V. Rice
(in man-days)
per acre

Items of labour input	IR20	IRB	BPI76	INTAM	Ordinary
Seed bed preparation and care	7.71	7.71	7.71	7.71	5.43
Land preparation	20.30	20.30	20.30	20.30	18.85
Pulling and transplanting	17.72	17.72	17.72	17.72	14.85
Care of crops	4.28	4.28	4.28	4.28	2.28
Weeding	16.00	16.00	16.00	16.00	6.84
Harvesting and thrashing	62.10	67.40	57.00	58.00	43.65
Drying and hauling	12.58	13.80	9.48	9.95	3.77
Total man-days	140.69	147.21	132.49	133.96	85.67

Source: Rice and Corn Production Co-ordinating Council Bulletin, National Food and Agricultural Council, Manila, 1969.

achieved simultaneously - output would rise, labour utilization would increase and the concealed unemployment would be minimized. As a matter of fact in an economy like that of Bangladesh where the majority of workers are in agriculture and where there is a visible surplus of urban and rural labour, sustained development cannot be ensured simply by transferring labour from agriculture to industry. Unless the productivity in the agricultural sector is raised and ensured so that a large number of non-agricultural workers could be fed with domestically

produced food, any transfer of labour will be suicidal.

The strategy of agriculture-based development will necessitate infra-structure development in major irrigation work, drainage, soil conservation, transport network for the distribution and supply, etc., which in turn will absorb the growing labour force. It is sometimes argued that such strategy would raise the income of the poor masses who would spend on consumer goods, and thus frustrate the objective of savings. This is not valid in the case of Bangladesh for in Bangladesh the poor masses have the propensity to save more than the middle and upper income groups who indulge in 'conspicuous consumption' of imported luxury goods. Besides, in view of the existing level of dietary intake of the poor masses, it is only conceivable that any expansion in income opportunities will first of all expand the demand for food and most of the subsequent surplus would go towards savings. Thus the strategy of agricultural development and a policy of employment expansion are mutually inclusive so much so that emphasis on one almost necessarily includes the efforts in the other. The conclusion here is fairly endorsable in the light of the performance of Indian economy in the past decades.*

Agricultural development is imperative on a number of other counts as well. So long as self-reliance is a declared motto of the new country, dependence on foreign

* For an elaborate discussion see Mellor, John W. *et al.*, *Developing Rural India*, Cornell University Press, Ithaca, New York, 1968, Chaps. 1 and 19.

aid and foreign private investment must be minimized and the prospects of domestic savings boosted at the earliest. Agriculture being the most dominant sector of the economy must provide the largest component of such savings. And hardly any saving is possible unless the present state of agriculture is improved. In Bangladesh no large-scale capital formation can be effectuated without the participation of the agricultural sector and the hopes of accomplishing industrialization will remain empty without the development of agriculture.

The prices at which agricultural commodities are exchanged for urban goods largely determines the rate of savings and investment in the urban sector.⁷ It has been pointed out earlier that cost of food in Bangladesh accounts for more than two-thirds of the earnings of the low-income group and that rising cost of food due to deficit supply has caused the cost of living to rise in the urban areas. The obvious implication here is that if food prices could be kept low through increased food production cost of living could be kept down which would allow the mass of people to save more; and if cost of living could be held low, money wages could also be held low, which would release funds for industrial expansion. Here again the experience in India, as shown by Mellor et al., is profoundly educative.

Finally, the relative size of the agricultural sector in the economy of Bangladesh is big enough to convince any

⁷ Mellor, John W. et al., op. cit., p. 17.

policy maker as to its future potentiality of yielding the biggest share of taxes in the country. If properly developed, the agrarian sector alone can contribute a major amount of capital for the overall development of the country. On the contrary, if the stagnant rural sector is squeezed, nothing will be obtained except social dissatisfaction and unrest. Bangladesh which was subjected to prolonged neglect in terms of development, and squeeze in terms of taxation, should understand the implications better than any other country.

The necessity of achieving agricultural development can be rationalized on one more economic count. Nowadays it is well realized that because of the superiority of the matured industrial countries no relatively underdeveloped country can succeed now in industrializing for export under the competition in the world market. Therefore industrialization programme in Bangladesh will have to be tailored mostly for the domestic market. And unless the vast section of the domestic market is made receptive through endogenous development, there is no future for the expansion of industries in the country.

Agricultural development as a basic strategy is no less imperative from the point of view of cultural heritage, ideological aspirations and spiritual make-up of the Bangalee nation. In Bangladesh agriculture is not only the livelihood for 80% of the population, it is the way of life for that vast majority of the population.

Therefore, the overall development of the country must be equated with the development of the peasantry. Such a stand makes economic sense and at once promises to meet social obligations. Such a policy has fed 800 million Chinese people, satisfied at least some of their basic aspirations, maintained a cultural continuity and done much to bolster the self-respect of the Chinese nation.⁸

The new nation in Bangladesh is committed to the ideals of democracy, nationalism, socialism and secularism. Democracy, in order to be secured in its effective operation, must travel down to the people and not relapse in a form of oligarchy like that of Pakistan or India.

"If democracy - political, social and economic - was to be achieved, it was imperative that a beginning was made to energise the roots from which the saplings could grow."⁹

Clearly, therefore, local social institutions must be developed in order to ensure local public participation in the political and economic processes. Luckily, the mechanisms of political democracy and agricultural development converge. It is no accident then, that there is a high correlation between a functioning democracy and a high level of productivity as is

⁸ Smith, Charles, China in the Modern World - 2, The Financial Times, November 21, 1972, p. 31.

⁹ Dey, S.K., Power to the People - a chronicle of India (1947-67), Orient Longmans, Calcutta, 1969, p. 22.

observable in China. In China democratic centralism* has released the full productive potentials of individuals and groups in achieving the production targets through the use of limited local resources. Conventional statements of economists and agronomists in the past that China's arable land could not be augmented, nor the yield of land be raised sufficiently to feed the expanding population, have altogether been falsified. Both the challenges have been overcome not by magic but because the people have been mobilized and motivated to do it by making them aware that everything they do to make improvements will now benefit themselves. Today China, despite its larger

* The Chinese planning mechanism taken together with their principle of democratic management means that there is a channel of continuous exchange of views, reactions and opinions from the bottom of the system to the top and down again to the bottom. Administrative sub-divisions and fragmentations (Communes, Brigades, Teams) help as instruments of political control and national development. But even when the freedom of manoeuvre is allowed to the lower level, the Central Government retains an armoury of controls at least in terms of targets of production and essential resource distribution - this is the element of centralism in democracy which makes a compromise whereby the centre lays down the general policy guidelines and national targets and the units at the local level are expected to translate those into actions appropriate to a particular locality in which they find themselves. Thus the rigours and rigidity of statism is ameliorated. For further discussion on democratic centralism see:

- (i) Townsend, J.R., Democratic Management in Rural Communes, China Quarterly, No. 16.
- (ii) Willmott, W.E., Economic Management in Chinese Society, Stanford University Press, 1972.
- (iii) Whitney, Joseph B.R., China: area, administration and nation-building, The University of Chicago, Department of Geography Research Paper No. 123, 1970.
- (iv) Healey, Denis, How China runs with No Income Tax and No Inflation, The Sunday Times, Jan. 14, 1973.
- (v) Smith, Charles, op. cit.

population, is already basically self-sufficient in food. The success derives from China's social and political system and the institutional ramifications of that system which make the implementation of economic plans much more effective.¹⁰ Whereas the main criticism against India's relative failure in agrarian development is that she did not proceed vigorously enough or early enough to create much required local institutions.¹¹

Economic, political and cultural independence - the essentials of sustained nationalism - are won together and lost together. If one is lost the other cannot be saved. In order to maintain this intertwined liberty which is essential to protect nationality, a Third World country in the present world situation must become self-sufficient* in food first of all. Here again agricultural development is in full accord with the ideals of nationalism. Bangladesh will be wise to concentrate on 'development through food production' for the sake of protecting the hard earned liberty and national identity.

¹⁰ Deshingkar, G.D., Progress on the Farm, The Hindustan Times, October 20, 1972, New Delhi.

¹¹ Mellor, John W. et al., op. cit., p. 8.

* In view of the meagre outcome of the UNCTAD III, and the growing recognition that the world as a whole is not yet ready to accept the realities and responsibilities of international cooperation for development, Sartaz Aziz, the Director of Commodities and Trade Division of FAO, cautions that the developing countries should discard their earlier expectations and become increasingly self-reliant by reducing their dependence on developed countries. - See Aziz, Sartaz, Necessity of a New Development Policy, Inter-economics, Verlag Weltarchiv., GMBH, Hamburg, No. 7, 1972, pp. 214-218.

The foremost implication of the ideals of Socialism is a wide distribution of necessities of survival and opportunities. Fortunately again the objectives of distribution and the imperatives for agricultural development coincide. It has been shown earlier that one of the major bottlenecks in agricultural development is the existing tenurial arrangement and the basic social inequality which has resulted in unequal access to resources and institutions. It has also been indicated that unless social relations are changed by drastic redistribution of land and other assets, and of the control over institutions, no sustained development of agriculture is possible. Such a process of social levelling is also the egalitarian goal of socialism whereby the differences among the participants of development are minimized. Bangladesh will find a true reflection of her socialistic ideals in following a strategy of development based on rational agricultural growth. Apart from land redistribution, institutional reform and social equalization, rural public works also are parallel imperatives for agricultural progress. Rural public works will ensure wide distribution of income opportunities and social overheads, and at the same time will enlist popular participation in the development process.

Clearly, therefore, Bangladesh can and should combine her economic imperatives, political ideals, social aspirations and cultural continuity very effectively into a single strategy, that is, development

through agriculture and food production first. Agricultural development should be seen not only as a step towards economic salvation but also as the quest for the fulfilment of the intrinsic values of Bangalee culture and mysticism.

In purely material terms, increased food production can be a profitable economic activity. In cereal deficit South Asia a surplus production of rice and other food crops is clearly a lucrative business proposition. The probable factor proportions in Bangladesh (on labour intensive techniques) is distinctly advantageous in comparison to the high energy consuming food production in the industrialized countries. The probable advantage is that any surplus food produced in Bangladesh could be highly competitive in the world market. And the prospective importers in South Asian region would be able to save on the freight of their imports. From the point of view of competitive advantage it does not appear necessary on the part of Bangladesh to alter so-called under-developed characteristic¹² of her production structure. Countries like Denmark, Holland, Belgium and New Zealand have demonstrated that a country may have a higher proportion of agricultural output in her GDP and export, and still be able to join the rank of 'developed country'.

¹² Bhagwati, Jagdish, *The Economics of Underdeveloped Countries*, World University Library, 1966, Chap. 4, pp. 44-54. The notion is nullified by Professor Bhagwati himself in citing the examples of Denmark, Holland, Belgium and New Zealand.

It is therefore fallacious to generalize that industrialization is a necessity for higher per capita incomes. The objective of higher national income can be achieved in Bangladesh through agricultural expansion primarily focussed on food production. Bangladesh can remain distinctly Asian and Bangalee, and still raise her economic status.

IV. PRODUCTION REQUIREMENTS IN THE RURAL SECTOR

Chapter 14

FOOD REQUIREMENTS

So far our discussions have been concerned with establishing the magnitude of the food problem and the urgency of developing agriculture. We must now commit ourselves to the task of estimating the consumption and production targets based on nutritional requirements. We must also attempt to formulate the guidelines as to the future targets which will have to be achieved in food and other agricultural production, indicating at the same time the priorities which will have to be adjusted.

The understanding of the physiological requirements of food is said to have originated with the observation of life as a chemical process around the turn of the 18th century. Having been late in the development of physiology and bio-chemistry, scientific investigations into man's food and nutritional requirement is still far from complete. Conclusions reached so far on the subject of human nutrition are admittedly 'provisional, tentative and open to further research'. The latest FAO/WHO* report on energy and protein requirement is in fact a summary review of best knowledge so far available, with some re-examinations, revisions and modifications in the recommendations on the basis of new data, but not the

* Joint FAO/WHO Ad Hoc Expert Committee Report on Energy and Protein Requirement, WHO Technical Report Series No. 522, Geneva 1973.

last word.

To the extent that life 'is a chemical process', food has two fundamental physiological purposes to serve:

- i) maintain body warmth (fuel) for sustained bodily activity, and
- ii) perform essential growth and/or maintenance work in the body.

The first purpose is served by energy foods (carbohydrates and fats) while the second one requires a large group of chemical compounds collectively called proteins, each member of which has a highly differentiated chemical composition, nitrogen being the character element. In addition, food must also contain adequate quantities of 'accessory' elements which do not supply energy but one of great physiological necessity, namely the vitamins and minerals.

A proper diet therefore should contain not only energy (calorie) but also other nutrients (proteins, minerals and vitamins). Ideally people ~~must~~^{should} eat what they need but in real life they choose what they like or eat whatever is available. Hence diets may provide sufficient energy yet be grossly inadequate in other respects. For instance, carbohydrates, the main energy source for most people, may be present in the diet in such a quantity that the intake of other nutrients is negated. Malnutrition is the inevitable result under such circumstances. Thus quite inadvertently, a population may become deficit in calcium, iron, protein

and vitamins if the food providing the energy are not selected carefully. Therefore, in estimating the national food requirement, the first principle to bear in mind is that the total energy per caput is to be calculated by adding the energy from different food groups.

The energy requirement of individuals depend on four variables interrelated in a complex way: (a) physical activity, (b) body size and composition, (c) age and (d) climate and other ecological factors.¹ It is implicit, therefore, that individuals of same skeletal frame and mass, living in the same micro-eco-system with the same mode of living (work hours and mobility) have a similar energy requirement. Children and adolescents need additional input of energy; so does the group of pregnant women and lactating mothers. It is admitted in the literature concerned that the degree of physical activity, while most important, is certainly the most difficult to assess and in practice the degree of activity to be assigned to large populations cannot yet be satisfactorily determined. Hence it is reasonable to go for an estimate of the average energy requirement for the various age and sex groups on the basis of a normal (observed) pattern of physical activity; or alternatively on an assumed (desired) pattern. Obviously, some individuals would need less and others more in reality, but in a group these surpluses and deficits would neutralize one another and the estimated requirement

¹ WHO Technical Report Series No. 522, op. cit., p. 22.

would represent the average of the group.

Energy requirement is more or less calculable on the basis of knowledge of energy expenditure. No such straightforward method is still known of finding how much protein is needed. This much is known, however, that protein requirements must meet conditions of N balance in all age groups and adequate growth in children. N balance here means making up of the obligatory N losses through urine, faeces, sweats and of the amounts needed for the formation of new tissues. The quantitative implication of this is held to be that the protein intake for all adults should not fall below 1 gramme of protein per kilogramme of body weight.² It is also recognized that the nutrition of the pregnant woman has an important influence on the course of the pregnancy and the health of the infant - low birth weights are related to poor nutrient intakes.³ It should further be borne in mind that average N cost of lactation is to be compensated by an additional protein intake. The Joint FAO/WHO Expert Group on Protein Requirement (1965) quoted with approved evidence that the performance of trained workers was better when they got 1.1 gram rather than 1 gram of protein per day per kilogram of body weight. The group estimates that 0.7 gram per kilogram of body weight per day might meet the needs of most people under normal

² FAO Committee on Protein Requirements Report, FAO Nutritional Studies No. 16, Rome 1957.

³ WHO Technical Report Series No. 522, op. cit., p. 46.

conditions. It is further agreed that from infancy to adolescence protein requirement varies from 2 to 3 grams per kilogram of body weight. Further, daily supplement of 6 to 15 grams are suggested for women during lactation and the later half of pregnancy. But since the family distribution pattern is in itself not proper, the average protein supply will have to be comfortably in excess of the proportional requirements.⁴

In addition to the issue of quantity, the question of quality of protein is also paramount. Large differences exist in the nutritive value of individual proteins or groups of proteins - milk proteins have been shown to support satisfactory growth in infants and young children, while research on egg proteins has consistently shown them to be of high nutritive value for adults.⁵ As a matter of fact it is not the protein that is need physiologically but the constituent amino acids which ^{are} ~~(seem to be)~~ of crucial importance. It is widely accepted that the eight essential amino acids which cannot be synthesized in the human organ by the simple nitrogenous substances, need to be obtained directly from proteins. And since no plant protein has so far been discovered which is rich in all the essential amino acids, it is necessary to ensure an adequate intake of more high quality protein.

It is also quite conceivable that a diet may contain

⁴ Joint FAO/WHO Expert Group Report on Protein Requirement, WHO Technical Report series No. 301.

⁵ FAO Nutritional Studies Report No. 16, op. cit., p. 11.

proteins of high quality but the quantity of these available may be disproportionate to meet the physiological needs. The proteins in egg, milk, meat and fish are indeed not precisely similar in amino acid content, although as a group they are generally superior to proteins contained in cereals, legumes and other common food. The actual adequacy depends not only on the composition of food proteins (eight essential amino acids) but also on the percentage of those amino acids in the diet and the extent to which they are meeting the needs of particular groups of persons. In view of these considerations, FAO/WHO studies suggest that the proteins should be derived from a variety of sources and it is further desirable that a part of the protein should be of animal origin.^{6,6A}

⁶ FAO Nutritional Studies No. 16, op. cit.

^{6A} Taking into consideration the incompleteness of knowledge, the proportion of the population that has a larger protein requirement, the greater probability of diseases and infestation coupled with common scarcity of animal products to needy population, Pirie suggests that it would be prudent to work on the assumption that 1.5 grams per kilogram of body weight will be needed; and to meet the requirements of amino acids 10 to 12% of the total calorie intake must be derived from proteins which are well-balanced in their amino acid contents, i.e. egg, milk and meat. - Pirie, N.W.; Food Resources Conventional and Novel, Penguin Books, England, 1969, p. 109.

Dr. Passmore holds that in national food planning the aim should be a food supply in which at least 10% of the energy is provided by a mixture of proteins. This information is obtained on the basis of personal communication with Dr. Passmore. Dr. R. Passmore is Reader in Physiology, University of Edinburgh, and Member of the Joint FAO/WHO Ad Hoc Expert Committee on Energy and Protein Requirements.

The latest Joint FAO/WHO Report on Energy and Protein Requirements (1973) has approved and accepted certain observed energy-protein inter-relationships. It has been established that there is a general inter-relationship between the level of energy intake and N balance such that some reduction in energy intake below the stipulated requirement results in a loss of body protein in the adults or a reduction in growth rate of the young. Therefore the adequacy of energy intakes must receive first consideration so that any additional protein supplied to meet the estimated protein needs will be effectively utilized. It has also been approved on evidence that increasing protein without energy or increasing energy without protein both are equally ineffective. Therefore, energy and protein needs should be considered together in planning for the nutritional improvements of populations whose diets are deficient in either.

The fundamental principles of nutrition and dietary intake reviewed so far have extraordinary relevance for the estimation of food requirement in Bangladesh where presumably more than half of the population are the victims of malnutrition, of which growing children and women of child-bearing age are most severely affected. The general diet is heavy on cereals - rice constitutes more than two-thirds of the dry weight of the daily food providing 85% of the total calories consumed. Milk, egg and meat products are present in the diet in such small

amounts that they hardly make any substantial contribution to the nutrient intake. Intake of fats and oils is really scanty and the intake of fruits is almost entirely seasonal. There is general unawareness of the special needs of the growing children or of the pregnant or lactating women such that the best food is the preserve of adult males, and children and women get only the remaining food.⁷

It has been mentioned in Chapter 8 that about half of the households studied had inadequate calorie intake. It is of great importance to note here that 82-83 per cent of these calories are supplied by carbohydrates. Protein intake is even more appalling - 60% of the households studied did not meet acceptable levels; almost 70% of the dietary protein is cereal protein.⁸ Equally dismal is the intake of vitamin A, the average level of which is half the suggested acceptable intake value of 3500 I.U.s per person per day⁹ - half the suggested acceptable intake value. Consumption of green leafy vegetables is fairly uniform throughout the year, but the quantities eaten are so small that some 40% of the population have deficient or low plasma concentrations of vitamin A and carotene. Here again children and women

⁷ U.S. Department of Health, Education and Welfare, Nutrition Survey of East Pakistan 1962-64, Office of International Research, NIH, Bethesda, MD., U.S.A., 1966, p. 1.

⁸ Ibid., p. 4.

⁹ Nutrition Survey of East Pakistan, op. cit., p. 7.

during pregnancy and lactation are the most deficient group.¹⁰

The potential benefits of a better and balanced diet can never be over emphasized in the context of Bangladesh. The existing nutritional status of the population in the country seen in the light of the fundamental principles of dietary and nutritional intake should form the sole basis of a rational food production target. According to the recommendation of the FAO/WHO Ad Hoc Expert Committee it must be reiterated here that the proper basis for planning should not be from the national level downwards, for instance by setting the national production target, but should proceed from the individual and household requirements upwards. The nutritional requirements of individuals in the different physiological groups of the population should be estimated first in accordance with the safe level, which will then be added up to derive the total national requirement. Additional allowances will have to be made to meet the extra needs for effective work which is demanded by nation-building purposes immediately in Bangladesh.

The task is much more complex than appears from the stated approach. There is great difficulty in calculating the cumulative effects of the different variables (age, weight, climate and activity) in order to adapt energy requirement in different groups. Although the WHO Technical Report No. 522 has prescribed a simpler

¹⁰ Ibid.

model^{*} which is designed to enable the different parameters in a single calculation table, the method still demands information on weight and activity pattern. These informations are not available to us now. Besides, even if the information were available, those would be irrelevant because increased body weight and increased output of energy is what we are aiming for. Hence it is argued here that requirement for a 'desired reference man' be worked out first. The requirements for the rest of the physiological groups may then be derived by applying the same factors of proportions that have been provided by the report mentioned above. It must be mentioned here that those factor values (see Appendix V) have been worked out on the basis of adjustment for age only; and hence the approach is subject to severe criticism from the nutritionists' point of view, on the grounds of being too lavish. True, not all the individuals in the group of 'desired reference man' would be engaged in the same type of physical activity, nor the old age group or the child group would work the same hours; but we have nothing to lose in providing a margin of safety. In this connection a very vital caution may be sounded that if the total production falls short even slightly, the socio-economic forces may lead to a very inequitable distribution in the most needy sector of the population; and thus the initial objective of increasing energy output to speed up development may be defeated.

^{*} Table 26, WHO Technical Report No. 522, op. cit., p. 80.

Estimation for the requirement of proteins and vitamins may also be accomplished in the same way, i.e. in relation with the 'desired reference man' except that the factors of proportions may be obtained in this case from the table on the 'Theoretical Safe Level of Protein Intake' as provided in the WHO Technical Report No. 522* (see Appendix IVA). The issue of additional allowance for the pregnant and nursing women is, however, common in the estimation of energy, protein and vitamin requirements. Happily, the problem of finding out the number of pregnant women is solved by the report mentioned above where it has been suggested that if the number of pregnant women in a population group is not known, it can be assumed that there are 10% more pregnant women than infants below 12 months of age, allowing for pregnancy wastage and perinatal mortality. If the number of lactating women is not known, it can be approximately deduced from the number of infants under 12 months of age ...and in the calculation of protein requirements the assumption that all infants below one year of age are being breastfed can be made.¹¹

Having resolved the methodological complexities we can now proceed to calculate the dietary requirement of 'desired reference man'. In a calculation of calorie requirement for African and Southeast-Asian population Professor Colin Clarke has settled for a 50 Kg.-man as

* Table 28, WHO Technical Report No. 522, op. cit., p. 87.

¹¹ Ibid., p. 85.

the reference man for India and South-east Asia, on the basis of some observation in Indian peasant community. And accordingly he has worked out that 2545 Kcal will be required for a 4-hour work-day, and 3070 Kcal if an 8-hour work-day is assumed.¹² While the assumption of 50 Kg. for a reference man is not unrealistic, for our purpose 53 Kg. appear to be a more befitting assumption. Incidentally, WHO Technical Report has used 53 Kg.-reference man, to illustrate the calculation procedure, as typical of a developing country. According to WHO-prescribed formula the reference man would need 2440 Kcal per day assuming a "moderately active" routine of life. The definition of 'moderately active', however, does not quite equate with the manual labour involved in agricultural operations in Bangladesh. In view of this discrepancy as well as the desired increase in labour input in agriculture, it is more appropriate to assume a 'very active' pattern of life for the reference man. Accordingly the energy requirement of 2440 Kcal needs to be modified by a correction factor of 1.17.¹³ The energy requirement for our reference man thus comes to 2855 Kcal per day.

Protein estimation for the reference man, as we have noted already, is a much more tangled up job. The WHO Technical Report's recommendation of 37.1 gram of protein

¹² Clark, C. and Haswell, M.R.; *The Economics of Subsistence Agriculture*, Macmillan & Co., London 1964, pp. 12-13.

¹³ WHO Technical Report No. 522, op. cit., p. 83.

per day for the reference man weighing 65 Kg. seems very low, since it has been quoted earlier that 1.1 g. per kilogram of body weight is desirable. Considering the high rate of probable wastage (due to cooking and intestinal infestation) between the food protein and its absorption at the physiological level, one would be wise to settle for 1.5 g. per Kg. of body weight or thereabout, as the required daily intake of proteins. Dr. Pirie has also suggested the same amount (see footnote 6A). For our reference man of 53 Kg. the total protein intake should stand somewhere between 70 g. and 80 g. per day.

With the basic nutritional target of 2855 Kcal of energy and 70-80 gram of protein per day, a food requirement table (Table 13.1) has been prepared for the reference man in Bangladesh. While preparing the table, the obvious necessity was to keep in mind the dietary tradition of the people as well as the available items of food at present, and distribute the required nutrients over those items because dietary habits cannot be changed overnight. People do not accept food which does not suit their palate. To most of us human beings food is flavour, culture, ritual and memory - much more than a complex of chemicals. Food habits can be changed only by a process of ceaseless public education over a period of time. As for the immediate future, therefore, the imperative has been to make the best of what

is available and acceptable.*

The food requirement table thus prepared and subsequently authenticated by the appropriate personalities,** has been used as the basis of calculation for the food requirement of the entire population in three different dates: 1975, 1990 and 2000. While total requirements

* This point is well recognized by FAO in endorsing that the choice of foods can be made only from the supplies available through domestic production or importation and within the economic reach of the consumer. FAO further acknowledges that these agricultural and economic determinants should not be confused with cultural ones. What people are willing to eat is determined by a complex system of attitudes, ideas and assumptions that form the local cultural pattern which include religious beliefs, restrictions, taboos, ideas pertaining to the merits or demerits of a food, and other attitudes which are as yet little understood. People tend to eat what they like, which is usually what they are accustomed to eating from infancy. Concepts as to what foods are good may be based on folklore, commercial advertising, or on sound scientific knowledge. FAO observes that simply paving the way for the acceptance of new scientific facts, education and particularly science education, will aid the application of new scientific knowledge to the improvement of diet. - Freedom from Hunger Campaign, Basic Study No. 6, Education and Training in Nutrition, FAO/Rome, 1967, pp. 21-22.

** Professor John Hawthorn, Department of Food Sciences, Strathclyde University, and Dr. R. Passmore, Reader in Physiology, University of Edinburgh, and Member of Joint FAO/WHO Ad Hoc Committee on Energy and Nutrition Requirement. Dr. Passmore felt that cereal intake should be reduced to 450 g. per day. But in view of the dietary tradition of Bangalees, it was decided that recommendation for cereal intake should be below 500 g. per day. As an illustration of dietary tradition, it may be cited here that during the first quarter of the century J.C. Jack reckoned 'comfort level' for the Bangalees upon consumption of 82 lbs. of unhusked rice, i.e. 56.5 lbs. of husked rice per head per month which provided for a daily intake of 846 g. The then Famine Commission of Bengal, on considering the daily subsistence, accepted 1.5 lbs. of husked rice per head meaning an intake of 675 g. per head per day. This amount was thought to be required to keep a cultivating man physically fit. - Jack, J.C., The Economic Life of a Bengal District, Clarendon Press, Oxford, 1916, p. 61.

are summarized in Table 13.2, the detailed estimates for the different age and sex groups may be seen in Appendix VII. The figures in Table 13.2, however, represent the consumption requirements only and hence are not the food production targets. Production targets must be set higher than what is stipulated in Table 13.2, in order to take care of the inevitable losses between the harvest and the plate. It is well known that huge amounts of grain in the developing countries, including India, Pakistan and Bangladesh, are lost in the process of storage, movement and distribution.* Besides, there is a wastage of an 'inedible portion' in all the raw foods produced, which demands that the production target be raised further in order to obtain the edible weight of the required foods.

* According to a report published by the Central Food Technological Research Institute in Mysore, India, food losses approach \$10 billion yearly. According to another estimate, fully 50 per cent of the food grown in India is lost to the pests. In Brazil the food lost to rodents and pests is estimated at 40 per cent. Africa loses about 30 per cent of its food production in the same manner - cf. *Famine - can we survive?* Ambassador College Research Department, Ambassador College Press, 1969, California, U.S.A., p. 74.

The examples cited here may appear to be at the extreme end. However, the fact of wastage in the process of storing, movement and distribution remains undeniable. On a conservative basis a wastage allowance of 15% may not appear unreasonable. However, the other factor of wastage, i.e. the 'inedible portion' (skins, outer leaves, shells, bones, stones, etc.) in all raw food produced demands a further allowance in the total production requirement. On the basis of the chart provided by the HMSO Manual of Nutrition, UK Ministry of Agriculture, Fisheries and Food, such inedible wastage calls for an allowance of 10% at the very least.

Above all, on the principles of self-reliance, any food production model should have the provision of 'reserve' for emergencies arising out of probable crop failures due to drought, flood or pestilence or other natural or man-made disasters. This has the most pressing implication in cereal production. Equally important are the provision for seed and feed requirements. On these considerations, the total requirements in food production has been estimated and tabulated in Table 13.3.

On the basis of the estimated total requirement for 1975, per capita cereal production requirement stands at 219.9 Kg. (484.8 lbs.). Assuming that an average family consists of 5.6 members, cereal production requirement per family comes to about 1231 Kg. (2715 lbs.) per annum. Given this grain production requirement, per capita land requirement would be 0.16 Ha (0.39 acres) under the present rate of yield. This means that an average family would need about 0.89 Ha (2.20 acres) of land in order to produce 1231 Kg. of rice cereals. Assuming that the other necessities of life would be obtained through a second and a third crop, 0.89 Ha (2.2 acres) may be considered as the subsistence unit.

It follows that on the basis of subsistence unit about 10.22 million families or 57.23 million people can be absorbed in the agricultural sector under the present land productivity. The remaining 21.43 million people may be accommodated in the non-agricultural sector including rural trade and village industries. This

Table 14.1

Food Requirement per Adult in Bangladesh

(For a Ref Man: Weight 53Kg, age 25-30, working 8 hrs non-sedentary, 1½ hrs of walk, 1½ hrs active recreation)

Require- ment per adult		Equivalent Food Value*										
		Energy	Protein	Fat	Calcium	Iron	Vit. B ₁	Riboflavin	Niacin	Vit. A	Vit. C	
	gm	Kcal	MJ	gm	gm	mg	mg	mg	mg	I.U.	mg	
Cereals (Rice)	500	1795	7.5	35.5	5.5	70.0	5.00	1.10	0.2	19.00	-	-
Pulses/ Legs	75	260	1.09	17.2	1.5	77.2	4.5	0.45	0.12	1.5	120	2.85
Vegetables and Spice	150	35	.14	2.3	0.27	60.4	1.5	0.08	0.10	0.78	1830	46.35
Fruits	50	34	.14	0.25	0.08	7.8	0.20	0.01	0.01	0.16	174	16.10
Oil	40	353	1.48		40.00	0.0	-	-	-	-	-	-
Fish	30	43	.17	6.4	1.8	70.0	0.37	0.01	0.04	0.79	43	-
Meat	15	20	.08	2.0	1.3	1.2	0.22	0.01	0.02	0.63	15	-
Egg	15	23	.09	1.6	1.7	7.0	0.34	0.01	0.04	0.01	144	-
Sugar	30	110	.46	.3	-	11.7	0.75	-	-	-	-	-
Milk	200	130	.54	7.0	7.0	238.0	0.20	0.08	0.36	0.20	280	2.00
Net Totals		2803	11.7	72.55	59.15	543.3	13.08	1.75	0.89	23.07	2606	67.30
Gross Totals		2800	11.7	73	59	543	13	1.8	0.9	23	2600	67

* Calculated from the Food Composition Table, FAO Nutritional Studies No. 15.

Notes on Table 14.1

Value for the cereals represents the value for under milled parboiled rice only.

"	"	pulses	"	the mean value of six	different kinds of pulses and lentils.
"	"	vegetables	"	"	"
"	"	fruits	"	twenty	"
"	"	fish	"	nine	"
"	"	meat	"	25 gms of different fresh fish and 5 gms of dried/cured fish.	"
"	"	egg	"	lean beef, veal, lean mutton and poultry.	"
"	"	milk	"	50% hen's egg and 50% duck's egg.	"
"	"	sugar	"	cow's milk only.	"
"	"		"	50% refined sugar and 50% crude sugar.	"

Table 14.2 Food Consumption Requirement in Bangladesh
(in million tons)

Year	1975	1990	2000
Population	78.66 millions	118.49 millions	151,660 millions
Cereals	11.928	18.266	23.320
Pulses/Lentils	1.693	2.614	3.355
Vegetables	3.183	4.933	6.337
Fruits	1.061	1.644	2.112
Oil/Fat	0.848	1.315	1.689
Fish	0.677	1.045	1.341
Meat	0.338	0.522	0.670
Egg	0.338	0.522	0.670
Sugar	0.636	0.986	1.267
Milk	4.515	6.971	8.946

Table 14.3 Food Production Requirement in 1975
(in million tons)

	Consumption	Wastage* @ 25%	Reserve @ 10%	Seed @ 10%	Total
Cereals	11.928	2.982	1.193	1.193	17.296
Pulses/Lentils	1.693	0.423	0.169	0.169	2.454
Vegetables	3.183	0.796	-	-	3.979
Fruits	1.061	0.265	-	-	1.326
Oil/Fat	0.848	0.212	0.085	-	1.145
Fish	0.677	0.169	0.068	-	0.914
Meat	0.338	0.085	-	-	0.423
Egg	0.338	0.085	-	-	0.423
Sugar	0.636	0.159	0.064	-	0.859
Milk	4.515	1.129	-	-	5.644

*For the allowance of inedible wastage, HMSO Manual of Nutrition 1970 has been consulted.

implies that the 57.23 agricultural population will have to feed 21.43 million non-agricultural population in addition to their own requirements. Therefore grain production targets at the producers' level must be pushed up further. Thus grain production target per capita in the farms reaches 302 Kg. requiring every agricultural family to produce 1692 Kg. of cereals per annum. To summarize:

Cereal production requirement:

Per farmer	302 Kg (666 lbs)
Per farm-family	1692 Kg (3730 lbs)
Per hectare per family	1901 Kg (4191 lbs)
Per acre per family	769 Kg (1695 lbs)

The estimated total production requirement compared with the current production level of rice cereal makes it imperative that the current production be raised more than 50%. In the preceding paragraph it has been made clear that if all the 22.5 million acres of cultivable lands are brought under rice crop once a year still yield per unit of land will have to be increased by about 40%. If, however, area under rice crops remains the same as it is now, full 50% rise in yield will have to be ensured. Although the task itself appears to be herculean, examples of international achievements provide room for optimism. Even within the country, as cited earlier, there have been examples in the recent past where in the demonstration farms average rice production has been as high as 3280 lbs. per acre.

In China productivity had already risen to 2672 lbs. per acre in 1958 when 85% of the land was fertilized through organic manures such as night soil, stable manure, compost, green manure crops, mud from the bottom of the canals and ponds rich in organic matter, oil cake, etc. The techniques of raising the yield will be discussed in the next section.

Of the non-cereal food items let us first consider those which are derived from plant sources. From the point of view of dietary habits and economics, pulses and lentils demand attention immediately after rice cereal. Foods of this group are consumed in greater quantity in monsoon when fish and vegetable become scarce. Since the protein content of pulses is high (about 25% of the dry weight) and is of higher biological value, pulses should be patronized to continue providing a source of protein intake particularly in view of the monsoon situation. Consumption requirement of pulses has been fixed nearly three times higher than the actual consumption level of 28 gr. per person per day, reported in the recent past.¹⁴ But in terms of acreage requirement the figure would be much higher than the present, because so long part of the consumption was provided by imports and not produced locally. And also because in the current estimation methodology, allowances for wastage, reserve and seeds have been incorporated. According to popular estimate, 15 maunds (560 Kg.) is the standard yield of

¹⁴ Nutrition Survey of East Pakistan, op. cit., p. 76.

pulses per acre. It is reported that lentils do not respond much to irrigation. Hence it may be assumed that at the current rate of yield a total of 4.388 million acres will be needed to meet the production target.

The intake of vegetables is apparently satisfactory (135 gm. per person per day) but the nutrient content in those vegetables is very low. And ironically, in spite of prolific production potential of leafy vegetables all around in Bangladesh, the consumption of the same is only 12% of the total vegetable intake.¹⁵ Therefore underlying implication is that while only 10% increase in vegetable consumption has been recommended, emphasis must be on the production of much more leafy vegetables so that the intake of such vegetables constitutes 50% of total vegetable consumption. However, on the yield of vegetables, conservative estimates suggest that on the average 5 to 6 tons of vegetables and 4 tons of leafy vegetables per acre is a reasonable assumption under the conditions now obtaining in Bangladesh. On these bases it may be concluded that about 895,000 acres will be needed for the purpose of vegetable production.

Perhaps the highest increase in the expansion of food plant production will be demanded by crops producing cooking/edible oil. The nutritional requirements call for a nearly seven-fold increase in the current consumption of 6 gm. of fats and oils per person per day.¹⁶ So long

¹⁵ Nutrition Survey of East Pakistan, op. cit., p. 76.

¹⁶ Ibid., p. 78.

mustard and rape seeds have provided the major sources of edible oil. Consumption of ground nut oil, cotton seed oil and soyabean oil has been negligible. But in view of their higher yield potential and better nutritive value, groundnut and soyabean deserve much more serious attention. Under the environmental factors of Bangladesh soyabean bears a great promise. However, assuming a 35% oil extraction rate and 90% crushing, the actual seed requirement will be 3.8 million tons. According to conservative estimates 12 maunds (448 Kg.) oil seeds (mustard and rape) may be expected from an acre. On this basis total land requirement for oil seed crops comes to about 8.48 million acres.

Intake of sugars and sweets in the rural areas on the average is 7.5 gm. per person per day.¹⁷ This dismal amount includes mostly molasses, palm date juice and some confections. The nutritional requirements demand a net four-fold increase on the current level of intake. On this basis it has been estimated that 859,000 tons of consumable sugar is needed. But at the existing rate (12%) of extraction about 7.158 million tons of cane will be required. Assuming a rate of yield of 800 maunds (29.86 ton) of cane per acre, the total acreage required for cane crop comes to about 240,000 acres.

Consumption of fruit is very small in Bangladesh, the statistical average being 1 to 2 gm. per person per day.¹⁸

¹⁷ Ibid., p. 76.

¹⁸ Ibid., p. 77.

The distribution of fruit intake is extremely uneven - fruit intake takes place only during May-June-July when mango, lychee, jackfruit, pineapple and papaya are available in plenty. Unfortunately information on yields of different fruits is not available, but it is conceivable that with better horticultural practices and introduction of new varieties, yields could be raised two to three times the present level of production. However, in view of the land crisis, any expansion in the area under fruit in and around the villages is inconceivable. Large-scale expansion in horticulture has to take place in the hill areas of Chittagong and Sylhet. In the meantime more intense use of the existing fruit areas is imperative. The country has indeed a long way to go in fruit production.

Like many other hungry countries, protein hunger in Bangladesh is serious, particularly protein from animal sources. Food from animal sources constitutes only a very insignificant portion of the total food intake. Meat consumption is only 6 gm. per person per day, while the consumption of eggs is even lower - the average villager happens to eat one egg in 22 days.¹⁹ Intake of milk and milk products together make up 17 gm. per person per day. Fish and crustaceans, however, constitute the largest source of proteins of animal origin. Even the poorest households are found to consume fish at the rate of about 28 gm. per person per day, which is obtained

¹⁹ Ibid.

primarily from the local ponds and rivers. Under the circumstances it is necessary to boost the intake of egg, meat and milk in order to balance the diet. Undoubtedly meat and milk production is an expensive process in terms of calorie input and the subsequent land demanded by the animals. Nevertheless some meat and dairy products should not be considered costly in view of the probable benefit that would result from a balanced diet.

Since meat, milk and egg can be obtained from more than one source and in combinations (cattle = meat and milk, poultry = meat and egg), let us simplify the problem by assuming that the required amount of milk would be supplied by cows only. Goats in Bangladesh are so poor yielders that it is better not to count them as a source of milk. Therefore if milk is to be produced domestically, cattle will have to be raised anyway. Besides, there is no choice but to continue animals as the source of draught power, and hence a sizeable cattle must have the inevitable claim on the resources for feeding themselves. These two factors together would determine a minimum indispensable size of cattle resource which must be considered as the parameter - the maximum given source for obtaining beef/veal. (Cattle, which competes with man for land, cannot be expanded in numbers for the single purpose of meat only.) The remainder of the required meat, however, may be made up by poultry and/or goat.

The 5.64 million tons of required milk could be

supplied from 3.76 million cows and buffaloes assuming a productivity of 1.5 ton^{*} of milk per cow per lactation. Under the existing circumstances, it would be more realistic to assume 1 ton of milk per cow per lactation meaning that 5.64 million milking cows will be needed.

Calculation of the requirement for the draught power has to be determined by the peak demand of animal power when maximum output in the shortest time is essential. In this area widely differing views are encountered. The FAO estimates that with reasonable organization one pair of bullocks can provide the draught power requirement for 16 acres both for cultivation purposes and the related transport.²⁰ Whereas estimate from a local source says that generally a pair of bullocks can manage only 4 acres of land.²¹ It would not be irrational, therefore, to assume 8 acres per pair of bullocks. On this basis, we find that another 5.62 million bullocks

* Observing the experience of farmers in Kanajhuli in West Bengal the advisors opined that 2 tons of milk per cow per year is within the capacity of good breeds in this part of the world. However, in order to provide a more conservative basis, 1.5 ton was suggested for exploration of the production requirement. See UNO/FAO: The Appraisal of Agricultural, Fishery and Forestry Resources in relation to the Needs in the Lower Ganges-Brahmaputra Basin, FAO/59/9/6421, August 1959, Chapter VII, p. 13.

²⁰ FAO: The Appraisal of Agricultural, Fishery and Forestry Resources in relation to the Needs in the Lower Ganges-Brahmaputra Basin, FAO/59/9/6421, August 1959, Chapter VII, p. 5.

²¹ Ahmed, K.; Agriculture in East Pakistan, Ahmed Brothers Publications, Dacca, 1964, p. 257.

will be required as draught animals.*

Now, with a cow population of 5.64 million and a draught bullock population of another 5.62 million, meat would be available from both the sources - from the surplus calves and from the old-age stocks. Of the new-born calves every year some would go for dairy and draught replacement and the rest would be available for meat. Of the old stock, i.e. those over six years of effective service, one-third may die of natural causes and the rest, allowed some fattening, would be available for meat. Following the FAO methodology,²² the number of cattle available for use and for consumption may be shown in the following way:

	Assumption A millions	Assumption B millions
Number of draught bullocks	5.62	5.62
Number of milk cows	5.64	3.76
Calves born @ 80%	4.51	3.00
Dairy replacement @ 17%	0.95)	0.63)
Draught replacement @ 17%	0.95)	0.95)
Surplus calves available for meat	2.61	1.42
$\frac{2}{3}$ replaced animals do.	1.27	1.06
Total animals available for meat	3.88	2.48
Total meat available @ 400 lbs/ 180 Kgs per animal at 3 years or over**	698,400 tons 446,400 tons	

* The implicit assumption here is that the number of bullocks required should not be worked out on the basis of the number of family farms. A pair of bullocks per family farm of 2.5 acres is obviously too many to be economical. Some pooling or borrowing of draught animals exists and this should be rationalized and institutionalized. From the point of view of optimal use, therefore, one pair of bullocks will be needed for every 3 families. This obviously presupposes a communal form of social organization.

²² FAO: The Appraisal of Agricultural...Basin, op. cit., Chapter VII, pp. 14-16.

** FAO maintains that an average carcase weight of 500 lbs (225 /

If one assumes that no calves will be slaughtered before 1 year of age, 25% would be slaughtered between 1 and 2 years of age, another 25% between 2 and 3 years and the remaining 50% after 3 years of age, the total number of cattle to be fed under assumption A may be calculated as follows:

	Livestock unit equivalent per head of animal*	Number of heads of animals millions	Total livestock units millions
Draught bullocks	1.0	5.62	5.62
Milking cows	1.0	5.64	5.64
Bulls	1.0	0.05	0.05
Calves (0-1 yr)	0.3	4.51	1.35
Calves (1-2 yrs)	0.6	1.12	0.67
Calves (2-3 yrs)	0.8	1.12	0.89
Total		18.06	9.22

FAO suggests that a ratio of around 3 crop acres per every 2 animals is a feasible assumption in the light of the information provided by Allahabad Institute of Agriculture, India. On this basis about 13.83 million crop acres will be needed for fodder and forage.

So far the production of egg is concerned, one is bewildered by the differential rate of productivity between the large-scale commercial production in the

(Footnote contd. from previous page)

(225 Kg) at 3-4 years of age should be achievable. -
Ibid., p. 14.

* These conversion factors are taken from FAO publication, FAO - The Appraisal...Basin, op. cit., Chapter VII, p. 20.

developed countries (200 + eggs per hen) and the peasant-production of the less developed countries (50-80 eggs per hen). The required 423,000 tons of eggs apparently may imply a highly industrialized system of poultry production, but that would be inconsistent with the production model envisaged so far in this study.

Fortunately, however, we have encouraging examples of non-industrialized production coming from Thailand where a chicken of an average farm family consumes up to 40 Kg of grain (rice) annually and in the average lays 143 eggs.²³ On a conservative basis, therefore, a ratio of 120 eggs per hen per year may be assumed.

While the production of egg is being considered in terms of weights, the weight-size of egg is also involved. Assuming an average weight-size of 50 gr,^{*} that is to say 20,000 eggs per ton, we find that 8460 million eggs would be needed for annual consumption. At the rate of 120 eggs per hen, 70.5 million laying hens would then be required. The annual feed requirement for these birds will be about 2.82 million tons of unmilled cereal grains. This means that egg production demands an area of 4.24 million acres for the production of poultry feeds. (Poultry feed requirement could be amalgamated with the cereal requirement for human consumption but that would obviously add up to show a steeper rise in the rate of

²³ Clark, C. and Haswell, M.R., op. cit., p. 12.

^{*} FAO proposes 55 gr. as the feasible target whereas the average weight of eggs now available in Bangladesh is 43 gr.

yield to be achieved.)

In the context of riverine Bangladesh, production of fish protein appears to be a relatively easier job. The present rate of production is far below its potentials - 40% of the inland ponds and impounded water bodies are lying derelict and organized pisciculture is yet to be attempted. In the light of experience in other East Asian countries,* a productivity of 1600 Kg per acre can safely be assumed. On this basis a total water area of about 570,000 acres will be needed of which one-third (189,000 acres) are available in local fresh water impoundments alone. Inland haors and beels (swamps and depressions) offer another 724,000 acres - let alone 410,000 acres of estuaries, 340 miles length of coasts and 4500 miles length of rivers and their tributaries/distributaries. Obviously, therefore, fish-protein production does not make any demand on land. However, in terms of actual production organization in the local fresh water ponds, some difficulties are foreseeable. It has been experienced in China that the optimum size of a pond for fish production is between 0.5 acre and 1 acre. A pond of such a size can produce between 800 Kg and 1600 Kg of fish on our foregoing assumption. This is far too much from the point of view of actual requirement of a single family. Therefore, for the

* Fish production in Taiwan is 815 Kg per acre with fertilization and that of Indonesia and China are 2035 Kg and 2829 with sewage fertilization and pig manure fertilization respectively. See Pinchot, Gifford; Marine Farming, Scientific American, Vol. 223, No. 6, December 1970.

sake of efficiency an optimum size pond cannot be assigned to each and every single family. Instead, 10 or 12 families may be grouped together to work cooperatively in a pond of 0.5 acre and share its yield. This proposition of course presupposes a communal form of social and economic organization in the same way as that of draught animal.

The total food production requirement analyzed so far and translated into land requirement, may now be summarized as follows:

Cereals (Rice)	22.5 m. acres	
Pulses	4.388	"
Vegetables	0.895	"
Oil seeds	8.48	"
Sugar cane	0.24	"
Fodder	13.83	"
Poultry feed	4.24	"
	<hr/>	
	54.57 m. acres	
	<hr/>	

The entire food production model is based on the assumption of self-sufficiency and hence the proposition of import is ruled out throughout the calculation. However, some substitutibility may be evaluated wherever a choice is visible. In this regard oil seed crop stands out very prominently in terms of its disproportionate demand on land. Comparatively speaking, oil seed crop produces less than one-fifth of value per acre as that of sugar cane. Moreover, sugar cane yields (rate of extraction) can be expected to go up much more

rapidly than that of oil seeds if timely crushing is done and better varieties are introduced. Since the prospects of oil seed are not nearly so bright, it may be worth while to import oil seeds in exchange for sugar. Alternatively, if soyabean is planted the same oil yield may be achieved at the expense of only 6.36 million acres of crops* - a saving of 2.12 million crop acres thus ensured. The total land requirement for food production may thus be reduced from 54.57 million crop acres to 52.45 million crop acres.

Yet the importance of cash crops in the self-sufficiency model is in no way reduced. Cash crop must be produced in order to keep the export earnings which are so vitally important to pay for the imported textiles, capital equipment, building/construction materials as well as to defray the cost of large infrastructure development. In view of our conclusion in Chapter 9 that a stable supply of quality is the key to success in export earning, it is imperative to make a generous reservation of land for jute crop which must not come under competition from any other crops. A reservation of 4 million acres instead of the current 2.4 million acres appears to be more sensible in order to provide the

* A ton of soyabean per acre of crop is a common yield which yields 180 Kg of edible/cooking oil, and an additional by-product of 727 Kg of 40% oil-seed meal per ton. It may also be pointed out here that soyabean meal is a protein-rich by-product which may be used very profitably for poultry production. For further details see Gurst, Jonathan: No Need for Hunger, Random House, New York, 1963, p. 81.

required margin of safety. This will perhaps be able to take care of the tobacco crop as a subsidiary cash crop.

The total land requirement for the combined food and cash crop production thus comes to about 56.45 million acres, which is nearly two and a half times the cultivable land available in Bangladesh. The implication is clear - the cropping ratio has to be improved from the 1.4 to 2.5. This is the over-riding imperative in terms of any development action in the context of problems and realities of Bangladesh.

Increase in agricultural production can obviously be achieved through geographic expansion of cultivable land, and/or through increasing the cropping ratio, and/or by improving the rate of yields. The first possibility is ruled out in land-hungry Bangladesh. The role of the third possibility is to be viewed cautiously at present, because the conventional technology of boosting yield, i.e. tractor-agricultural chemicals package is not envisaged in this study for reasons explained earlier. The desirable production technology towards higher yield can be expected to come about in full scale only through gradual development of a new generation of farmers who will understand the importance of biological farming and appreciate the intrinsic value of compost and follow the ecological principles in the entire technique of production. Apparently such potentialities are far ahead and as such a generation's time must elapse between now and such productive potentials to be achieved.

That is why a period of 25 years has been used in this study to understand the future implications of development in which time to harness the untapped potentials, to prepare the new generation as well as the physical environment, to provide food and a means of living for a rapidly growing population as well as yield capital accumulation for the national economic salvation. The next 25 years are very crucial because (i) the greatest impact of the exponential rate of population growth (population will double itself) will be felt in the country during this period; (ii) the contraffecture in the logistic curve in the population growth (if it would follow a logistic curve) may take place only after the turn of the century; and (iii) during this period a re-adjustment in resource use, philosophy and technique is bound to take place on a global scale making the availability of resources to the deficit and poor countries much more precarious than it is now. Therefore it is difficult to see how a perilous end can be avoided unless the basic resources of man, land and water are reorganized on revolutionary principles, geared towards a considerable degree of diversification in agricultural production during this period as opposed to the existing culture of rice and jute or another cash crop.

But the existing reality of widening food gap and trade gap does not permit any allowance in time at all. Therefore a crash programme must begin now through the only other possibility left, i.e. increasing the

cropping ratio. The implication is crystal clear - the cropping ratio has to be increased from 1.4 to 2.5. This is the over-riding imperative in terms of any development action at all in the context of the realities and problems of Bangladesh.

Chapter 15

SUPPLEMENTARY REQUIREMENTS

The country's general economic status vis-a-vis the current trend of her population growth, and their future implications require more than the single objective of food production. At the individual family level, next to food crop production a second crop is needed to pay for the salt and kerosene, clothing and bedding, furniture and utensils. In addition, certain emphasis is also demanded on the mobilization of investible surpluses needed to enhance the individual family's housing standard as well as to finance long-term infrastructure development at local and national levels. On the principles of self-reliance and self-sufficiency the necessity of indigenous capital formation implies the necessity of creating opportunities for cash generation. It has been established earlier that the peasants in Bangladesh do have the propensity to save but due to their dismal level of living they cannot mop up any surplus which could be accumulated for the purpose of national investment. We have also noted that, because of the short horizon of their socio-economic perspectives, whatever savings they manage is indeed meant for consumptive purposes in religious festivities or social ceremonies. Nevertheless the habit and the willingness to save is there. What is needed is the creation of some opportunities.

The urgency of producing jute as the major cash crop

every year is crucially important from the national perspective, and hence it has been taken care of in the preceding chapter and its landuse implication incorporated in the national landuse calculation. At the individual family level, however, the jute crop will perhaps provide a medium of exchange to pay for the non-food commodities like clothing or kerosene. Obviously therefore, additional economic avenues are required whereby the sombre level of subsistence may be crossed and surpluses generated. In terms of additional avenues of economic diversification, the following areas appear to be within the feasible range:

- (i) Home-lot gardening;
- (ii) Livestock/Poultry raising;
- (iii) Crafts and village industries.

a) Home-lot Gardening

Most of the families in the rural areas have a reasonable amount of land around their dwelling structures. Although available in small parcels, these lands taken together are sufficient for small, intensely developed fruit or vegetable gardens. It is not commonly realized that these existing waste lands could be very profitably used for the production of nourishing, vitamin-rich vegetables and fruits for the home-table and/or for sale. In the experience of the Philippine Rural Reconstruction Movement, home-lot gardening has proved widely beneficial to health, and to the cleanliness and beauty of village

life. It has also provided a welcome source of additional income for many poor families who can sell the vegetables and fruits grown in excess of their own pressing needs.¹

Since land is a very scarce resource in the country, optimum utilization of land should be the guiding principle in home-lot gardening also. Crops should be chosen in such a way so that land is utilized round the year yet soil fertility is maintained. A balance has to be maintained between ecologic pre-requisites and economic return in terms of cash or food value. Of these two considerations, one must not be sacrificed at the altar of the other. The practice envisaged here presupposes knowledge about the soil and the plant to be grown at the micro-level. Since the peasants do not possess such knowledge, the responsibility must be borne by government agencies in agricultural extension services at the village level.

b) Poultry and Livestock Raising

In land-hungry Bangladesh livestock raising beyond what is essential for the sake of milk production and draught power may seem a luxury. But poultry raising is certainly a lucrative commercial proposition. This is well realized by everybody and poultry is reared as

¹ Yen, Y.C. James et al.; Rural Reconstruction and Development, Praeger Special Studies in International Economics and Development, Frederick A. Praeger Publishers, New York, 1967, p. 133.

far as the cereal supply permits. Unfortunately the local variety that is most unimaginatively and carelessly raised are poor yielders. Given a break-through in cereal production and introduction of improved varieties, poultry raising can be a revolutionary commercial activity of the peasant families. The greatest advantage with chickens is their rate of reproduction. Good breed hens start laying at about 6 months of age and lay over two hundred eggs per year. So it is possible to obtain two hundred times the weight of a hen from the cockerels of her own progeny in twelve to eighteen months. By comparison a dairy cow will perhaps yield twenty times her own weight in milk in one lactation, and the calf will not equal the cow's weight in a year. Obviously chickens are relatively efficient converters of vegetable protein to animal protein in meat and egg. A hen will convert about 30% of any vegetable protein she eats into egg. Soyabean oil-meal, a by-product of soyabean oil, which is unpalatable to human beings may thus be converted into first class protein.

In the context of riverine Bangladesh, duck raising appears to be more promising than chickens. Since crabs, frogs, tadpoles, oysters, snails and molluscs are considered inedible, they can be converted into first class proteins by raising ducks in large scale. This will bring the so-called "inedible" marine resources into use and at the same time minimize the feed requirements for poultry. Besides, ducks are found to be much

more disease-resistant than chickens. Ducks will not even demand any additional space for their living quarters. Platforms can be erected over the fish ponds in order to house the ducks. And in this way the fish ponds can be fertilized at the same time with the droppings of the birds without any extra effort. The idea is perhaps not new, but it has never been tried with any earnestness.

In the crucial issue of supplementing the source of protein or alternatively as a source of enhancing the cash earning of the peasants in the developing countries, raising of new species such as manatee or dugong have in recent years been suggested.* Although these animals are docile herbivorous mammals and their aquatic nature makes them ecologically suited to Bangladesh, they are unlikely to be culturally acceptable on the grounds of their being exotic and religiously un-sanctioned. By

* Dr Magnus Pyke has suggested in a recent publication that among animals which could well be utilized for meat but are now neglected, the freshwater manatee and the marine dugong can be singled out particularly. These animals feed on water plants which are neglected by other livestock, and the yield of meat for each pound of feed consumed is higher than that often obtained from conventional livestock. - Pyke, M.; *Man and Food*, World University Library, London, 1970, pp. 31-32.

A similar suggestion has come from Dr N.W. Pirie with more varied arguments. Dr Pirie suggests that edible herbivorous animals like the manatee or dugong would control menacing water weeds, e.g. water-hyacinths. These animals would provide a source of good meat without competing with other land livestock for food. The manatee particularly is in danger of being extinct and because of its unique attributes should be protected and domesticated. - Pirie, N.W.; *Food Resources Conventional and Novel*, Penguin Books, England, 1969, p. 129.

comparison rabbits stand a much better chance of being acceptable. Although there is no definitely known taboo against rabbits, people have not shown any interest in trapping the wild varieties, or domesticating them for the purpose of consumption. But keeping the domesticated rabbits or hares as a hobby has not received any public scorn either. Therefore no probable social obstacle is foreseeable in raising rabbits for commercial purposes (export), if not for local consumption.

Rabbits are well noted for their rapid rate of reproduction and the gestation period of their young is very short, 29 to 34 days. Rabbits are therefore very productive and they will eat the waste vegetation from many crops that man will not eat. They can be kept alongside the houses and so would not require any land.² Rabbits represent a clear opportunity but so long neglected in many poor countries including Bangladesh. The major benefits from rabbits include high nutritional value of the meat, low investment cost, high productivity (about 150 lbs. of fryers per female per year), as well as returns from sales of pelts and other by-products.³

² Dr Brian Gerard, the Edinburgh School of Agriculture, University of Edinburgh - by private communication.

³ Lipinsky, E.S.; Collings, G.W. and Litchfield, J.H. - authors of a paper on international nutrition from the Columbus Laboratories of Battelle, U.S.A. Cf. World Crops, January-February 1973, p. 56. Basing their observations on a preliminary technical-economic analysis of a rabbit venture in a developing country, the authors feel that the operation that would be most lucrative would be a cooperative venture of 20 to 30 producers each having about 250 female rabbits. By selling their output /

The operations involved in rabbit raising are no more demanding than those of poultry. The docile nature of the animal makes it possible for the children in the family to look after the stocks and thus contribute to the family income.

Village Crafts and Rural Industries

The very nature of agricultural production, as opposed to industrial production, gives birth to one undisputed reality, that is, seasonality in labour demand. Labour intensive technique of agricultural production as envisaged in this work will spread labour utilization over the stretched cropping calendar. Some labour will be absorbed in home-lot gardening and livestock/poultry raising. There is still likely to be some labour redundancy of both men and draught animals, particularly during the three months (July-August-September) of heavy monsoon rain when there is hardly any agricultural operations to be performed in the field and hence daily life is confined under the roofs of the houses. This unutilizeable labour can and should be used for the production of crafts in order to supplement the cash resources of the peasant families.

The discussion on village crafts and rural industries may be approached from a much wider angle, and thereby an

(Footnote contd. from previous page)

output collectively, the cooperative could obtain a better price for its meat and offer the assumed source of meat that is needed to obtain good sales contract.

integrated solution may be evolved. It is more than necessary that the national goals of self-reliance and self-sufficiency be translated and broken down into the local pattern of economic activity. Unless and until each village as a production unit is made self-reliant and self-sufficient, the national goal can never be fulfilled. On the other hand, the national goals of democracy and socialism ought to ensure democracy at the grass roots. Here it must also be argued that political democracy and economic democracy must go hand in hand - one is ineffective without the other. Concentration of power (USSR) and concentration of wealth (USA/UK) are both anti-democratic. Therefore centralized production organizations and centralized power base ought both to be ruled out from the production strategy of Bangladesh. If the villages cannot be made self-sufficient in economic terms, their political self-determination cannot be ensured. Therefore political democracy vis-a-vis economic democracy must be founded on a system of production at the village level.

Purely in terms of economic cost-benefit also, there is no point in setting up the units of production away from the potential consumers which clearly entails unnecessary cost and bother of transportation and distribution. In earlier days it was blindly accepted that localization of industries creates external economies; and that expanding size offers the benefits of internal economies (economies of scale). But it is well

realized now that in the process irreparable damage has been done by the external and internal dis-economies, alienation and dehumanization of factory workers and pollution being the most prominent manifestations. Through painful experience, the Chinese have realized that, instead of diverting the 'fictitious' rural surplus, it is more useful to stabilize the rural labour force through the creation of side-line operations and commune industries.

The guidelines are therefore clear - organize the villages as production units as well as social-political units towards a better and fuller life in which the individual will have the scope of growing both as a human person and as a member of the unit. The units, with their individual self-respect, will then form the basis of national integration through a higher level of co-operation on mutually respectful terms.

Such an objective can only be achieved by meeting the local demand by utilizing local resources, local initiative, and by enlisting local participation. Therefore the subsidiary production requirements must fulfil the following conditions:

- (i) augmentation of income and saving capacity;
- (ii) utilization of local resources - human and material;
- (iii) fulfilment of local demand by local production as far as possible; and
- (iv) ensuring the viability of the local socio-economic system.

Regarding augmentation of income and saving capacity the most obvious area is the revival of village crafts. From time immemorial the Bangalee peasant families have been making bamboo winnowing trays, grocery baskets, fishing traps and equipments, mats, cane mats and baskets, coir-doormats, jute hammocks (for hanging utensils), hand fans, etc. These artifacts, made of local materials, not only met their utilitarian needs, but also gave expression to their artistic faculties. But the village craftsmanship has made no progress in its technique and the quality has not improved. Many of the handicrafts are now facing competition from industrial products. And the shift in popular taste due to the false vanity in industrial finished goods, has been slowly killing the crafts. The tendency must be reversed and new imaginative items must be added to the traditional list. Taking into account the urban and perhaps international demand in the potential market, items like slippers, shopping bags, ladies' handbags, fashion hats, cases for transistor radios and the like, lampshades, window blinds, may be suggested to be annexed in the list of traditional village crafts. These artifacts may be made of jute, cane or bamboo or any suitable combination of these. In this age of growing search for things made of materials of biological origin as opposed to synthetics, articles made of jute or bamboo or cane will find an enthusiastic market.

A widespread invigoration of crafts making on

regular vocational bases will enable the families to expand their cash resources. By producing utility items at home, the families would save on items that would otherwise have to be bought. And by producing fancy items for the outside market, they can ensure a cash income. Serious crafts making will combat idleness and helplessness that prevails invariably during the long rainy season or other slack seasons. Moreover, exercise of individual skills will bring out the dormant Bangalee artistic talent and thereby instil a new sense of pride of achievement, which in turn will give them a strong sense of self-respect and identity.

Closely resembling village crafts are two other promising vocational arts: embroidery and dressmaking. Needlework is almost instinctive to the womenfolk of Bangladesh; and as such every girl of marriageable age is expected to know some needlework. And hence embroidery and dressmaking have always been considered artistic skills which ought to be acquired by every female particularly in the middle class. However, its economic aspect has always been undermined and under-focussed (perhaps deliberately) by the middle class).^{*} Thus embroidery and dressmaking could not catch the

^{*} The typical middle class value is such that the wives should not engage themselves in sideline operations for the sake of earning money because that will create an impression in the social circle that the family is not affluent enough by patrimony or by profession so as to be in the middle class. Works of art as sideline activity are not to be offered at the market for sale.

imagination of the economically needy families; and as a form of artistic skill those remained expensive artistic exercises which the poor families could hardly afford.

Surely dressmaking and embroidery can be rationalized on economic grounds alone, as a vocational art, and thereby made respectable and lucrative on its own economic merits. The economic advantages must be upheld to the hard-pressed families that dressmaking whether by machine or by hand enables mothers to provide sturdy and well-fitting clothing for members within her own spare time. It may also provide opportunity for women to work within their households for extra money income without interfering with their own basic household duties. In this way the rural communities' dependence on urban commercialized dressmakers may be reduced, and the families may find extra cash also.*

There are obvious demands of embroidery works on place-mats, napkins, towels, bedcovers, curtains, pillow-cases, cushion covers, tea-cosies, etc., in the urban areas particularly in the big offices, hotels and boutique shops. Besides, through the acquisition of skills in embroidery a woman will be able to make useful and/or decorative articles for home use, which will at the same

* Dressmaking is reported to be one of the most popular courses offered in the four-fold programme of the Philippine Rural Reconstruction Movement. The results are spectacular - in many barrios women have been able to supplement the family income by opening a dressmaking shop or doing work in their own homes for neighbours. For details of the programme see Yen, Y.C. James; op. cit., p. 186.

time be an emotional expression and a recreational outlet for the person concerned and a source of pleasure for the family.

Outside the circles of family and household there is a truly enormous area of introducing new economic activities or expanding the old ones which would supplement the mainstream of the economy, meet the local demands, and at the same time ensure the goals of viability of the local economic and social system as set out previously. The biggest obvious area is that of winnowing and paddy husking. At present these operations are carried out manually in most cases and the technique (home pounding) is time-consuming and inefficient. But there is hardly any choice because although there are rice mills almost all over the country, their locations are disadvantageous for popular usability. The rice mills are located only in the regional or sub-regional market centres such that paddy rice has to be transported to the mills and the husked rice transported back involving cost, wastage and bother both ways. Moreover, the monopolistic rice mills will perhaps charge exorbitant prices now in the pretext of higher fuel cost. One more built-in disadvantage in the existing technology of rice mills is that in the combined process of husking and polishing much of the nutrients of rice are lost. From the standpoint of nutrition also the rice mills are very wasteful.

The imperative, therefore, is to set up rice husking

centres in each village or a small group of villages which are in close physical proximity with one another. While the technological choices will be examined later on, the guiding principles may be laid out here. Winnowing and husking of rice should be labour-absorptive processes for the utilization of both human and animal labour; and the use of costly fossil fuel should be avoided altogether. The tools and equipment components should be such that polishing of rice is kept at a very minimal level.

Jute baling and pressing is just another big area where significant rural labour can be absorbed on full-time basis. At present jute baling and pressing is done in the small towns which are in fact regional centres of jute collection. In many cases jute is transported to the processing industries or export terminals in semi-loose form, involving unwarranted cost of transportation due to their unnecessary volume. Jute baling and pressing at the village level would create employment opportunities and at the same time reduce the cost of transporting jute by reducing the volume before transporting.

Similar employment opportunities exist in the field of oilseed pressing and sugar cane crushing. The existing sugar mills and oil mills are operated on the lines of large-scale industries, and hence capital intensive. These mills cannot be expected to promote the self-sufficiency of the villages. Particularly the oil mills largely jeopardise the basic interests of the

rural sector by exporting the oil-cakes to foreign markets instead of sending them back to the peasant in order to fertilize their cattle and the land. The sugar mills on the other hand produce such a sophisticated product, i.e. white sugar which the village folks can neither afford price-wise nor relish palate-wise. The large-scale oil and sugar mills therefore are not contributing anything towards the benefit of the villagers. An outrageous disservice would be done to the rural sector if the phenomenal jump in the production of oil and sugar as envisaged in this study is to be accomplished through the expansion of the existing technique. Besides, such an expansion on capital intensive line is beyond the financial capacity of the country; and large-scale import of capital is not to be sought so long as the motto of the nation is self-reliance and self-sufficiency.

Therefore the stipulated increase in oil and sugar production is to be achieved through setting up local oil-presses and cane-crushers throughout the entire rural landscape. This will create local employment, reduce the necessity of lengthy journeys of bulky raw materials to factories, save the wastage and cost involved in the transportation, and respect the consumer preferences of the local population. The local production of oil and sugar or gurh (molasses) will relieve the rural population of their undue dependence on the anarchy of the urban market.

Luckily the extraction processes involved in the

production of oil and gurrh are strikingly similar in the indigenous technology. It is quite probable then that one and the same premise may be used for both the purposes. And further that perhaps even the same basic equipment with some changes in the components may serve a dual purpose, thus saving a great deal on equipment and premises. Combined, these two operations will ensure longer periods of employment at minimal economic overheads.

The village handloom weaving has been one of the best craftsmanship in the country since unknown times. Although it is not based on the indigenous raw materials, it has remained with the local communities as an undying part of the traditional economy and culture. Neglected and persecuted though it is, the handloom still provides the largest single source of sarees for all the women in Bangladesh belonging to different income groups and social classes. The handloom, in spite of many obstacles, has successfully catered to the taste and needs of various social classes and of both sexes. There is no conceivable reason whatsoever why the rural Bangladesh cannot be and should not be made the permanent respectable home for handlooms on a much more invigorated scale and tempo. Since handlooms are operated by human labour, there is no significant risk for its products to go up in price in the same way as industrial products consuming high cost fuel would do. In view of the sombre future of industrial cost of production, it will be only wise to curtail dependence on milled yarn, and organize a

massive shift to khadi loom, using handspun yarn. If such a shift can be accomplished, a truly large area will be created for absorption of labour on a permanent basis, and at a truly low cost. Thus textile prices will be kept low and inflationary tendency held at bay. So far as the location is concerned, the climatic uniformity of Bangladesh permits the handlooms to be operated anywhere and everywhere. And since the raw cotton will have to be imported anyway, there is no compelling reason for localization of handlooms in any particular region. Through a grand revival of handlooms in every village or group of villages, a great part of the lost identity of the 'Golden Bengal' will be regained. This ideological motivation is no less important in the development process of Bangladesh. The intellectual leaders of Bengal in the early part of the century realized it well. Now it is realized in the international context that programmes in the Third World with a high ideological content and a low capital input are likely to prove the most successful.⁴

Pottery is another utility craft of Bangladesh which has survived till today but perhaps with less success and popularity than handloom. Traditional pottery is increasingly being defeated at the hands of aluminium pots and pans industry which uses imported raw materials and machineries. It is true that clay pots and pans

⁴ Gott, Richard; A Mexican Struggle for Survival, The Guardian, March 26, 1974, p. 3.

are inferior to those made of aluminium in terms of longevity, and hence the continued use of aluminium pots and pans is perhaps desirable. But surely pottery can be expanded through diversification and improvement in other items like plates, dishes, bowls, teacups, saucers, teapots, drinking glasses and flower vases, etc., some of which already exist in the production line. The imported china wares or those produced in the domestic industries can in no way be esteemed to be superior to the indigenous pottery products except perhaps in their sophisticated industrial designs and the elitist value attached to those. In fact some china wares appear to be much more fragile than clay wares. So far as design is concerned, the problem does not seem to be unsurmountable at all.

Clearly, the expansion of pottery craft and an enthusiastic public acceptance of the clay wares will go a long way in import substitution. While contributing to the national objective of self-sufficiency and self-reliance, the expanded pottery craft will offer employment opportunities round the year if developed in the traditional labour intensive line. At present the potentialities in pottery are not fully realized because it is confined within socio-economic enclave of a small 'lower-class' Hindu community. It must be emphasized here that the national goals of democracy, socialism and secularism demand that the vocation be brought out of its present enclave and thoroughly democratized. The

economic potentialities will then be unfolded and it will be seen that the promises are big indeed.

One more traditional craft which demands serious attention from the point of view of the current problems and future aspirations is that of black-smithy. Like pottery, black-smithy has also been subjected to social ostracism and economic subservience in a slavish manner, although its contribution to agricultural production and domestic life has always remained crucial. We have noted earlier in this study that one of the main culprits of low agricultural productivity is the use of archaic tools and equipment supplied by the village black-smiths. Agricultural productivity goals, therefore, make it imperative that large-scale expansion and improvement be accomplished in tools and equipment making. The machine-tool factory established near Dacca cannot be expected to supply the basic tools like the plough, the sickle, the spade, the trowel and the mattock, which are used every day by millions of peasants. Nor is it desirable to keep the entire population dependent on one source. Therefore, the tools must be produced at the local level. Luckily, the imperatives in productivity and the goal of self-sufficiency and self-reliance at local level converge. It is not difficult to see that the expansion in the production of tools and equipment at local levels based on democratic principles will open up new avenues of employment opportunities and at the same time create an atmosphere where the social stigma attached to the

professional group will disappear. Thus in one effort economic imperatives, social goals and political ideologies can be brought to fruition without any conflict.

In order to provide for fuller employment and to ensure the viability of the local economic system, the expanded craft may be required to make simple things like road signs, bill-boards, frames for doors and windows or even window grills for the urban markets. Small metal workshops of this nature recently set up in rural Mexico have so far proved their viability even against the current of capitalist technology and market forces.* In the existing circumstances of Bangladesh, the prospects of such workshops appear much brighter because no head-on clash with any big established interest is foreseeable. Such operations are now being carried out on small scales; and there is no reason why they could not be set up in the rural environment and thereby relieve urban congestion on the one hand and enhance rural respectability on the other.

Mention must be made of such village crafts and industries as carpentry, rural house construction, rope making and bell-metal works, all of which contribute to

* Richard Galt reports that at San Lucas Tecopilco and at a dozen other villages in the state of Tlaxcala, Mexico, where small-scale rural industries have been started, the seed of a viable future employment policy has been sown. So far it appears that these small workshops are able to insert their products competitively into the capitalist marketing system with which they must inevitably deal. See Galt, Richard, op. cit.

the fulfilment of village life to date; and as such these vocations must be helped to develop so that they can continue to contribute more effectively in the village life and economy. Without these self-sufficiency at the village level can never be claimed to have been accomplished. Luckily, one of these crafts has very great economic potentials in terms of cash and employment, that is bell-metal works. There appears to be a big international market for bell-metal handicrafts. Although the craft is based on imported raw material, from the point of view of relative export potentials, there is a clear competitive advantage in developing such handicrafts instead of going for the conventional manufacturing industries. It is obvious that Bangladesh with her incipient industrialization cannot expect any success in manufacturing for export in a highly monopolized world market. Instead, if Bangladesh concentrates on such articles which are in demand in the rich countries but cannot be produced competitively in their economic, technological and cultural framework, the advantages are clear. Therefore, the cultural infrastructure of Bangladesh in bell-metal works, amongst other crafts, may be used very profitably in expanding the foreign exchange earning as well as domestic employment opportunities.

The supplementary production requirements outlined above is oriented towards the goal of creating self-sufficiency at the grass-root levels based on the

principles of self-reliance, i.e. relying on the local available material, local talent and initiative and utilizing the base of traditional cultural infrastructure. The dividends can be expected to be very high indeed in numerous ways: (i) it will augment and expedite capital formation at the mass level; (ii) it will reach the materials and services at the doorstep of the potential consumers and thereby (iii) raise the standard of living of the masses; (iv) liquidate the tendency of rural exodus and urban concentration; (v) create an atmosphere and tempo of expanding and diversifying production activities and, above all, (vi) foster the national goals of socialism, democracy, nationalism and secularism.